UNIVERSITY OF SCRANTON CATALOG 1972 - 1973

COLLEGE OF ARTS AND SCIENCES

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University of Scranton
College of Arts and Sciences 1972/1973

UNIVERSITY OF SCRANTON
COLLEGE OF ARTS AND SCIENCES
CALENDAR 1972-1973

FALL SEMESTER
1972

September 3-5 (Sun-Tues)	Freshman Orientation
September 6 (Wed)	Classes Begin
September 13 (Wed)	Final Day for Change of Course and Late Registration
October 6 (Fri)	Holiday
October 27 (Fri)	End of First Quarter
November 6-7 (Mon-Tues)	Holiday — Election Day
November 22(Wed)	Thanksgiving Holiday Begins after Last Class
November 27 (Mon)	Classes Resume
December 8 (Fri)	Feast of Immaculate Conception—No Classes
December 14-20 (Thurs-Wed)	Semester Examinations
December 21 (Thurs)	Christmas Recess Begins

INTERSESSION
JANUARY, 1973

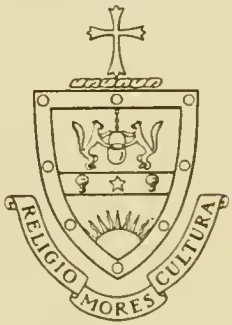
January 2 (Tues)	Registration
January 3 (Wed)	Classes Begin
January 30-31 (Tues-Wed)	Final Examinations

SPRING SEMESTER
1973

February 5 (Mon)	Classes Begin
February 7 (Wed)	Final Day for Late Registration and Change of Course
February 19 (Mon)	Washington's Birthday—No Classes
March 30 (Fri)	End of Third Quarter
April 16-24 (Mon-Tues)	Easter Holiday
April 25 (Wed)	Classes Resume
May 17-24 (Thurs-Thurs)	Final Exams
May 26 (Sat)	Baccalaureate Mass—Class Day Exercises
May 27 (Sun)	Commencement

University of Scranton

A Jesuit and Coeducational College of Arts and Sciences 1972/1973



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WHAT THE UNIVERSITY BRINGS TO THE STUDENT

WHAT THE UNIVERSITY BRINGS TO THE STUDENT

In an era when higher education is increasingly characterized by public institutions often of 40,000 students or more, the College of Arts and Sciences of the University of Scranton is a private, independent liberal arts college of 1400 students.

At a time when students are herded into the anonymity of 300-seat auditoriums and lecture halls, the faculty-student ratio at the University of Scranton is 14:1 in the current academic year. Our largest class last year had 48 students enrolled. At Scranton, the accent is on community and communication—not anonymity.

At a moment when teaching in the multiversities has been abandoned to graduate students and teaching assistants, at the University of Scranton the faculty teach. Indeed, it is a tradition that the chief administrative officer—the Dean—in each of the three colleges which comprise the University teaches at least one course each semester. At Scranton, teaching, and great teaching at that, holds primacy.

But even more fundamentally, the crisis on American college campuses in recent months concerns the question of values. Students charge that American educational institutions have no values. The universities are silent —not only on the issues of the hour, but on the enduring issues as well.

Much of what follows in this bulletin attempts to convey by word and image that the University of Scranton does indeed possess its own values and to indicate to you what these values are. We prefer to fly our colors.

HERITAGE AND VALUES

The University is changing. In response to historical events and educational developments, we are in the process of becoming a different institution from what we were last semester or last year. But every university, if it is to be great, must have a heritage to share with those who come to her.

The University since 1888 has stood in the Catholic tradition, bringing to its students the educational heritage of the oldest continuous institution in the western world. From the 12th century ecclesiastical foundation of the universities of Paris and Oxford to the more recent establishment of the Catholic University of America (1887), this tradition continues in the University of Scranton.

Beyond this, the University stands in the Jesuit tradition, one of the youngest of 60 colleges and universities administered by the Jesuits throughout the world. From the establishment of the Gregorian University in Rome (1551), to the founding of Georgetown College in the Federal City at the time of the adoption of the Constitution (1789), to the coming of Jesuits to the University of Scranton in 1942, this tradition has signified both academic excellence and Christian humanism

Dexter L. Hanley, S.J., President of the University, Jesuit Labor Lawyer, LL.B. Georgetown University; LL.M. Harvard University

OBJECTIVES

The tradition is reflected in the objectives of the University, approved by the Board of Trustees:

> The College of Arts and Sciences constitutes the historical core of the University's educational enterprise. Its students are expected to transcend the merely academic, and progressively to transfer their acquired science and technology, their independent research, their historical and literary sense of the inherited wisdom and learning of the past, their ability to communicate, in short, their developed powers, to the solution of the grave problems of contemporary society. It is expected that they will do so by fostering those value judgments basic to human life and education, values which flow not only from a given discipline but also from Christian revelation and the Judaeo-Graeco-Roman, western moral and intellectual traditions.
>
> Through his academic studies and developing sense of values, the graduate of the College ought more effectively to serve society because he is free from the limitations of his own experience and free from the domination of emotion and political passion uninfluenced by reason, religion or a political tradition based on law.

The University knows that it could not justify its existence and the trust of its students if all it did was graduate scholars or law-abiding citizens or faithful believers. Despising none of these goals, it nonetheless openly avows the higher and more impossible goal of graduating true persons.

A FACULTY WHICH TEACHES

If the University brings to the student a tradition and distinct values, its most important resource is its faculty. Over 200 faculty and administrators participate in the educational enterprise. They hold degrees from 135 different universities in 30 foreign countries on five continents. Cambridge and the University of London in England; Louvain and the Gregorian on the Continent; the University of Calcutta in India, the Meiji University in Japan, the University of Cuzco in Peru; Berkeley, Harvard, Yale, MIT, Notre Dame and Georgetown in America—all are represented among the faculty.

By its nature and function, a university faculty constitutes the most cosmopolitan element in a community. Hindu and Muslim, Christian and Jew, ministers and rabbis, scholars, research scientists and, above all, teachers, are found on the University's faculty.

The Jesuit tradition is carried on at the University not only by the 30 Jesuits engaged in teaching or administration, but by the fact that over two-thirds of the faculty hold at least one degree from a Jesuit college.

Many of the pictures which follow and the Faculty Directory at the conclusion of this bulletin present more detailed information about the faculty

Thomas Scott, S.J., Ph.D. University of Wisconsin, specialist in computer uses for study of history

John Quinn, S.J., Ph.D. University of London, specialist in cinema studies

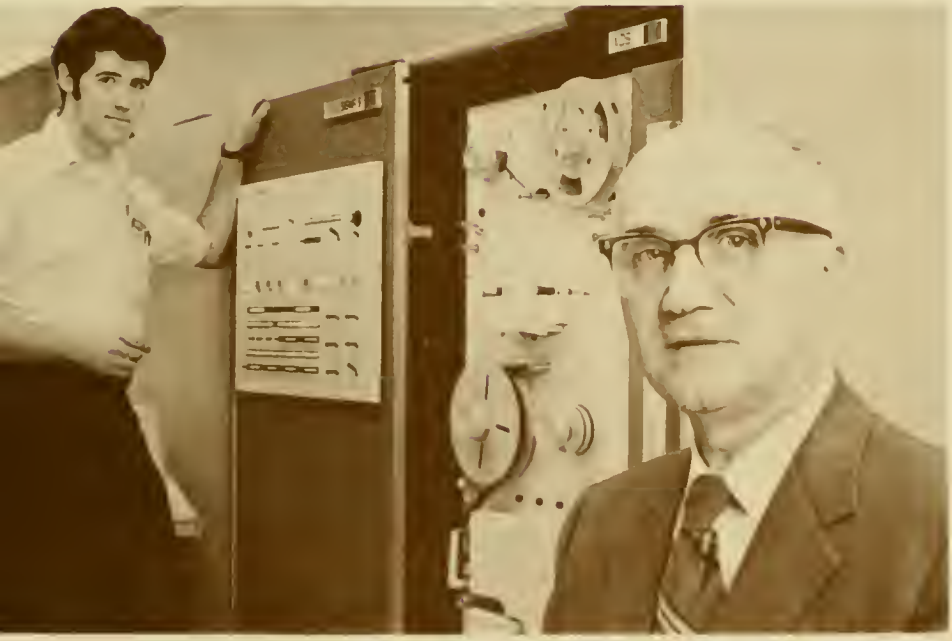
Francis MacEntee, S.J., Ph D Catholic University of America. biological researcher in recycling exhausted soils

Professors Ellen and Steve Casey, Departments of English and Theology

Rabbi Simon Shoop, lecturer in Jewish Studies; M.A. Yeshiva University; Ph.D. University of Pittsburgh; D.D. Jewish Theological Seminary of America

Professor Anne Jones, Lecturer in American and Visual Arts

Dr. Charles Keffer, Ph.D. in Physics, Harvard University; Chairman, University Senate, 1971-72



Professors John Beidler, Chairman of Department of Mathematics, and Andrew Plonsky, Director of Computer Science

THE SCRANTON ENVIRONMENT

The fourth largest city in the state, Scranton, with a population of over 100,000, is the principal city of Northeastern Pennsylvania. As a focal point of the interstate highway system, it is less than three hours by car from New York City and Philadelphia. The Pocono Mountains and Susquehanna River resorts with magnificent streams, lakes and numerous ski slopes are only an hour away.

The city itself is a unique laboratory of the American urban tradition. Her industrial history dates from 1840 when the anthracite hot blast furnace was utilized for the first time in the iron industry. The manufacture of iron and steel gradually gave way to the more important anthracite mining industry, the city and entire Lackawanna Valley being underlaid with one of the richest hard coal deposits in the world. The mines served to attract immigrants from a multitude of nations, giving Scranton even today sociologically and ethnically one of the most diverse populations in America.

As the anthracite industry collapsed towards the end of World War II, Scranton was faced with challenges only later to be faced by many other American cities: almost total conversion to a new economic base of manufacturing, reclamation of the area from the environmental pollution of the anthracite era and, amid all this change, the preservation of its own identity.

The recent restoration of the century-old Lackawanna Iron and Steel Co. furnaces just south of the University, plans for the establishment of a national coal and recreation park, the continuing development of the local Everhart museum, part of whose collection of 19th Century American folk art represented the United States at Expo 70 in Japan, are indicative of the city's uniqueness.

As the cover of the Bulletin illustrates, historically the University has been an integral part of the Scranton environment. The modernistic campus, built almost entirely in the last decade, overlooks the downtown area of the city. The historic nucleus of the campus is the Victorian mansion built in 1870 by Joseph Scranton, great-grandfather of William Scranton, former Governor of Pennsylvania and recently chairman of the President's Commission on Campus Unrest. The mansion and estate grounds were given to the University in 1942 by the Scranton family. Mrs. William Scranton presently serves on the University's Board of Trustees.

As the city has served the University, so the University has served the city. Fully half of the area's doctors, dentists, lawyers, accountants and male high school teachers are graduates of the University. Much of the business community responsible for the city's economic renewal received its training either at the Bachelor's or Master's level from the University. Members of the University science faculty serve the region through their research on the genetic effects of environmental pollution and their efforts at soil reclamation of the culm waste deposits of the mines. In the advance from the technology of the anthracite hot blast furnace to the Sigma 5 computer, the University and the city have been partners.

P.H.WATTS
SCRANTON PA
1889

THE CAMPUS

Since 1956, a development program has added 16 modern buildings including ten residence halls. Principal among these campus structures are:

ALUMNI MEMORIAL LIBRARY—opened in 1960, a striking presentation of advanced, functional architectural planning, this bright, air-conditioned building contains more than 130,000 volumes and subscription service to 900 periodicals. Microfilm, microcard and microfiche collections, a science reference room, music room, and the offices of the University's semi-monthly national book review, *Best Sellers,* are located here. Additionally, the Cooperative Program with Marywood College, less than two miles away, gives students full privileges to another 100,000 volumes, 900 periodicals, as well as an extensive collection of audiovisual materials.

JOHN J. LONG CENTER—completed in 1968, and named for the former Jesuit President of the University, this three-level, multi-purpose structure has enabled the University to broaden its program of physical education. It includes a 22,820 square foot main floor area used for basketball or convocations, with a seating capacity of 4400. It provides specialized facilities for such activities as wrestling, weight lifting, handball, tennis, and golf, as well as a physical therapy room and sauna.

LOYOLA HALL OF SCIENCE—provides the highly specialized equipment necessary for the study of engineering, physics, chemistry, biology, and experimental psychology. The University's Communication Center has facilities on the top floor of the building.

SAINT THOMAS HALL—located in the center of campus, this building is named for St. Thomas Aquinas and provides a symbolic historic link between the modern University of Scranton and its predecessor, St. Thomas College. It contains most non-science classrooms, language and communication laboratories, the Computer Center, the University Chapel, Research Bureau, offices for faculty and the Registrar, Treasurer, Dean of the College, Academic Vice President, Director of Public Relations, and Alumni.

O'HARA HALL—the recently acquired O'Hara Hall houses classrooms, accounting laboratories, and faculty offices for the Department of Business. It is located two blocks north of the main campus.

STUDENT CENTER—facilities include faculty and student lounges, cafeteria and snack bar, rifle range, game room, sun deck and a 400-seat auditorium used for cultural events and dramatic productions. The offices of the Director of Student Personnel, Dean of Men, Director of Placement, Student Government and most student activities are found here.

RESIDENCE HALLS—designed to function according to small-group living principles, ten residence halls for out-of-town students are provided on the campus. Constructed between 1958 and 1965, they are centered about terraced quadrangles. A Jesuit counsellor lives in most halls and there is a resident assistant on each floor. Out-of-town students who are married or veterans, who live with relatives within commuting distance, or who have grave financial need are permitted through the Dean of Men's Office to live off campus.

Two resident student plans are offered. The basic plan provides living quarters, breakfast, and dinner at $455 per semester. An optional plan provides three meals on each class day and brunch and dinner on weekends and mid-week holidays. This three-meal plan costs $515 per semester. Both plans include nursing service for emergency and short-term care in the infirmary. Inquiries about residence halls should be made to the Dean of Men. Further information is given in that section of the bulletin which deals with expenses.

what the student brings to the university

WHAT THE STUDENT BRINGS TO THE UNIVERSITY

If the University changes, it is primarily the succeeding student generations which change it. A recent issue of the *Windhover,* the college yearbook, was dedicated by its editors to the "Committed Idealist," to those students who bring to the University community their active participation in its life and whose diversity and academic achievements add to the prestige of their alma mater.

DIVERSITY

As the faculty come from around the world, so do our students. Twenty-four states and 16 foreign countries are represented in the University's student body. In turn, through the Year Abroad program, University of Scranton students matriculate at such foreign universities as Louvain, Madrid, Stockholm, Salzburg, Heidelberg, Strasbourg, and University College, Dublin. This interchange of students contributes to the diversity and intellectual life of the University.

At a time when the spirit of intolerance grips many American campuses, when only one political opinion may be expressed as well as prevail, it is a source of pride to the University of Scranton that a diversity of political and social views flourishes among our students. In the political turmoil of recent years that shut down many universities and brought violence to others, it was the determination of her students and faculty that the doors of this University should remain open, its classes held, that all opinions should be heard, and orderly processes followed in the resolution of our problems.

PARTICIPATION

Much of the work in a university community is accomplished through student input. Much of the scientific research at the University is done by undergraduate students in the laboratories and in the field. The University radio station, newspaper, and yearbook are edited and managed by students. Frequently students publish reviews in *Best Sellers* and, with faculty assistance, in other national scholarly journals. Students work in the public relations and admissions office, computer center, as resident assistants in the dormitories, as research assistants for deans and registrars.

Similarly, they participate in the University's decision-making. Five students are elected by the student body to serve on the University Senate. The vice-chairman of the Senate is currently a student. Others serve with departmental chairmen and faculty on the conference which recommends to the Dean changes in the academic program of the college. They form a majority on the Student Affairs Council which prepares legislation directly for the president's review. Students also serve with members of the Board of Trustees on several of the Board's committees: Finance, Student Affairs, Academic Affairs, and others.

ACHIEVEMENT

The Jesuit educational tradition has produced men as diverse as Charles De Gaulle, James Joyce, Teilhard de Chardin, Paul VI, Doctor Tom Dooley, Prime Minister Trudeau of Canada, film maker Alfred Hitchcock, coach Vince Lombardi—to name but a few of over 2,000,000 alumni. Ten thousand of these alumni have graduated from the University of Scranton. These, too, have achieved:

Patrick Cardinal O'Boyle ('16; classics), Archbishop of Washington; Dr. Clarence Walton ('37; history), first lay president of the Catholic University of America; Dr. Glynn Lunney ('55; pre-engineering), Chief of the Flight Director's Office for the National Aeronautics and Space Administration, lead flight director for the historic moon flights of Apollo 11 through 15 —to single out a few.

The record of achievement continues with the most recent class whose graduates went on to Georgetown, Harvard, NYU, Case-Western Reserve Law Schools; MIT, Rochester, William and Mary, Boston College, Notre Dame, VPI, Carnegie-Mellon Graduate Schools; and the University of New Mexico, Temple, Thomas Jefferson, Georgetown Medical Schools, among other institutions. The 1400 students currently enrolled in the College of Arts and Sciences are a distinguished part of the half-million students now enrolled in Jesuit educational institutions around the world.

A tradition of achievement: Dr. Glynn Lunney '55, Chief of NASA's Flight Director's Office, and James C. O'Connor '71, winner of Assistantship in Engineering to M.I.T.

Dr. William J. Parente, Dean of the College of Arts & Sciences, Ph.D. in Political Science from Georgetown University, specialist in Russian Studies and racial politics

THE ACADEMIC PROGRAM

ACADEMIC PROGRAM

DEGREE PROGRAMS

The College of Arts and Sciences offers the following degree programs for the undergraduate student:

BACHELOR OF ARTS	BACHELOR OF SCIENCE
Classical Languages	Accounting
English	Biochemistry
History	Biology
Modern Languages	Business Administration
Philosophy	Chemistry
Theology	Computer Science
	Economics
	Education
	Electronics
	Mathematics
	Medical Technology
	Physics
	Political Science
	Psychology
	Sociology

COOPERATIVE PROGRAM WITH MARYWOOD COLLEGE

The University's Cooperative Program with Marywood College—less than two miles away and the largest Catholic college for women in America—makes available to University students additional courses in the following areas:

Art	Music
Business Education	Radio and Television
Elementary Education	Special Education of the Mentally Retarded
Home Economics	Speech Arts and Therapy
Librarianship	Theatre

Information on these programs can be found in the current catalogue of Marywood College, from the specific departmental chairmen at that institution, or from the Dean of the College of Arts and Sciences at either Marywood or the University of Scranton.

THE SCRANTON PLAN

Beginning with the entering freshman class of 1971-72, the University's new curriculum is in effect. The product of a two-year study by a faculty-student-administration committee, the new Scranton Plan seeks traditional Jesuit University educational objectives in the era of the knowledge explosion. In departing from a core curriculum of specifically required subjects, it acknowledges that there are today many more requirements for a liberally educated person than was formerly the case: disciplines, especially in the natural and social sciences, not known a century ago; foreign cultures thought insignificant only fifty years ago.

The new curriculum in seeking to equip undergraduates with the ability to effectively communicate their knowledge, takes note that there are today many more ways to communicate than in the past. Computer science and other quantitative languages, applied Fine Arts as aesthetic languages, writing and oral communication laboratories may develop the ability to communicate with others and carry on the University's traditional emphasis on rhetoric as cogently as the study of Latin and Greek in the past or even the study of modern foreign languages in today's world of intensified international relations. Different students will have different communication interests and it is a virtue of the new curriculum that its flexibility can accommodate and utilize that interest.

Finally, the Scranton Plan takes note that contemporary students have criticized the absence of the study of values on American university campuses, the failure of the universities to deal with philosophies of life which provide the means to evaluate the norms of national and personal actions. The new Scranton curriculum provides a significant place for the study of philosophy, the theological tradition of the student, and comparative religions. This too continues a traditional emphasis in the University's educational pattern but allows the student flexibility in choosing to meet third and fourth year general education requirements either through theology or philosophy, in opening up more opportunities for the study of human values through related courses in psychology, sociology, environmental sciences, etc., and in making it more feasible to carry a double major in theology or philosophy along with the student's regular major.

CURRICULAR OUTLINE

Major Field of Concentration	36 credits
Cognates Related to Major	24 credits
General Education	67 credits

Major: 36 hours in the major field of concentration is the normal amount. Some departments require less, the minimum being 30 hours with the unallocated credits going into the other curricular areas. Several departments, especially in the physical science area, require more than 36 hours, the additional credits coming from the cognate area and/or as overloads beyond the normal 127 credits needed for graduation. The specific departmental curricular models on subsequent pages of the Bulletin should be consulted. Students desiring to shape an **interdisciplinary major** should consult the Dean of the College on their program.

Cognate: These are courses external to the major field of concentration, but which round out the student's competence in his major through the study of related disciplines and subject matter, or the acquisition of skills useful to his specific vocational goals. Normally the cognate will consist of 24 credit hours, some of which may be specified by the department and others chosen by the student according to his particular interests or objectives.

General Education: Shunning a merely technical or pre-professional education, the majority (67) of the student's 127 credits toward the degree are devoted to a broad liberal education according to the following pattern.

A. **Physical Education**—Four one-credit courses in the Freshman and Sophomore years ..... 4 credits

B. **Distribution of remaining credits into broad areas of knowledge as indicated in the table** ..... 63 credits

In some instances, departmental recommendations are made with respect to the general education courses; departmental curricular models should be consulted. In fulfilling the distribution requirement, a student ought ordinarily to complete at least five two-course sequences to provide depth as well as breadth in his general education.

C. **Interdisciplinary Courses**—These one-semester courses are taught by professors from two different departments. Their purpose is to demonstrate at an early stage in the student's college work the inter-relatedness of various fields of knowledge and the necessity to synthesize. The freshman student selects one of these courses in an area other than that of his major and cognate. In order to facilitate the student's entry into previously unexplored fields of knowledge, the course is taught under a pass-fail grading system.

D. **Communication Skills**—Unlike many college curricula, the new Scranton curriculum does not require specific courses in English grammar. Rather, because of its recognition that writing and speaking effectively are skills necessary for success in college and in one's later professional life, the College of Arts and Sciences requires that every student must demonstrate basic competencies in written and oral communication before his junior year. Each of these competencies may be demonstrated by the student in one of the following ways:

1. Competence indicated by the high school data submitted for admission: academic achievement or extracurricular success in these areas.
2. An examination supervised by Communication Center Faculty.
3. Certification by a professor that the student's class papers or oral presentations clearly demonstrate such competence.
4. Successful completion (a grade of C or higher) of courses set up to facilitate mastery of these skills: English 2 for oral communication; English 4 or English 7 for writing skills.

E. **Non-Classroom Activities**—With the approval of the Dean of the College, and where necessary the department as well, the student is encouraged to petition beforehand that certain non-classroom activities such as travel abroad, internships, participation in artistic productions, sustained

DISTRIBUTION TABLE

MAJOR FIELDS OF CONCENTRATION

General Education Areas	*Nat Sci. Math. Acctg. Psych. Comp. Sci.*	*Sociology† Bus. Adm. Pol. Sci. Econ. Soc. Stds. (Ed)*	*English History Classics Mod. Lang.*	*Phil. Theology*
	a	*b*	c	*d*
I. *Natural Science & Quantitative Studies* (Natural Sciences, Math., Engineering, Adv. Experimental Psych., Adv. Computer Sci., Acctg., Statistics)	—	9	9	9
II. *Social and Behavioral Sciences* (Sociology, Foreign Civilization, Business, Economics, Mil. Sci. 101, Pol. Sci., Psychology 23, 25, 26)	12	—	12	12
III. *Communications* (Speech, Writing, Languages, Applied Fine Arts, Graphics, Education, Computer Science 20, 21, 25)	9	9	9	9
IV. *Humanities* (History, Fine Arts—Appreciation, English, Classical and Foreign Literature)	18	18	6	18
V. *Philosophy and Theology*				
Philosophy	6 (6)*	6 (6)*	6 (6)*	6 or (6)*
Theo./Religious Studies	6	6	6	6
Free Area	6	9	9	9

CREDITS

† Sociology requires 12 credits in Free Area.

* Indicates these credits may be taken in either Philosophy or Religious Studies.

activity in political, social or religious organizations, etc., be supervised, evaluated and accepted for academic credit—normally in the Free Area of the General Education distribution.

INQUIRY APPROACH

In order that the freshman student may understand the nature of his major field of concentration from the beginning of his college studies, the new Scranton curriculum prescribes that the first year introduction to the major follows the inquiry or problem-solving approach rather than the traditional survey. This approach consists of two main emphases: more active participation by students in the classroom process and, secondly, an introduction to the way in which experts in the given field think, ask questions, and build models which structure and give coherence to reality. This approach is not merely concerned with the content or technical methodology of the field, but with the mode of thought, the logic, the epistemology, the style of the field.

SPECIAL PROGRAMS

THREE-YEAR BACHELOR'S DEGREE PROGRAM

The University of Scranton's New Curriculum and new calendar allow qualified students to attain their bachelor's degree within three years—thus considerably reducing the overall cost of their undergraduate education and allowing the student to enter the market place or begin graduate and professional studies a year earlier. While Advanced Placement or College Level Examination Program credits (see Index) are very useful for this, a student who does not bring these from high school may still complete the degree program in most majors within three years through the use of January Intersession courses and/or Summer School sessions. This presumes that at a minimum normal academic progress is being made. Typically, two Summer Schools (12 credits each) and two or three January Intersessions will suffice. Especially qualified students may be allowed overloads from the Dean of the College to further reduce this—as will Advanced Placement credits. The Dean should be contacted as early as possible in a student's career in order to facilitate the needed scheduling. Entering freshman students may want to use the Summer School immediately following their high school graduation to further this three-year program; the Director of Admissions should be consulted with respect to this.

FIVE-YEAR BACHELOR-MASTER'S DEGREE PROGRAM

This program enables University undergraduates to complete both the bachelor's and master's degree program within five years in the fields of English, Business, Chemistry, Biochemistry, and Physics. Students elect to enter the program after sophomore year. Ordinarily, two summers of study or equivalent January Intersessions are needed. In some departments it is possible to graduate with both degrees in four years.

HONORS PROGRAM

This program is designed to provide selected students whose QPI is above 3.0 with the opportunity for directed independent work and a challenge to their ability to synthesize. Applicants are admitted to candidacy only after the completion of three semesters of college. Those admitted to the program take interdisciplinary seminars as well as tutorials both in and outside their major field. All honors degree students must complete and give a public defense of a research project. For details consult the Director of the Honors Program or the Dean of the College.

YEAR ABROAD PROGRAM

Students with above average academic records are encouraged to participate in the University's Year Abroad Program. This ordinarily takes place in junior year but may also take place in sophomore or senior years. This year, 15 University students are attending the Dutch or French Colleges of Louvain University in Belgium, the University of Madrid, Trinity College in Dublin, and other institutions. Interested students should contact the International Services Advisor or the Dean of the College for detailed information.

DOUBLE MAJOR PROGRAM

Students at the end of the first semester of sophomore year or thereafter may elect to pursue a second field of concentration in addition to their first major. The permission of the Dean of the College and the agreement of the two departmental chairmen should be obtained in writing at this time and placed in the student's file. The student is responsible for all major and required cognate courses. The 67 credits in the General Education area need not, of course, be repeated. The Registrar's office will add the notation of the second major to the student's transcript in the first month of the student's senior year by which time he should have registered for all the courses required in the double major program.

INTERNSHIPS FOR MAJORS IN ACCOUNTING

Seniors majoring in accounting are eligible to participate in a ten-week, on-the-job internship with eight nationally recognized accounting firms. The internship takes place in December-February of senior year. Selection is made on the basis of QPI rating and on interviews by company representatives.

The student interns receive compensation for their work and very often excellent job offers. In the most recent year, students worked for such firms as Price Waterhouse, Haskins and Sells, Arthur Andersen, and Peat, Marwick, Mitchell & Co. in New York, Philadelphia, and other cities.

SUMMER INTERNSHIP PROGRAM

The University and the Economic Development Council of Northeastern Pennsylvania jointly sponsor a number of compensated internships for sophomore and junior undergraduates in all majors by which they may earn six academic credits in appropriate disciplines by their work in governmental and non-profit agencies. Students are responsible for their tuition, for 32 hours a week in the agency project, and for a three-hour weekly seminar at the University conducted by the College Coordinator. The objectives of the Program are to provide students with an opportunity to learn through service to the community. For further information, contact the Coordinator, Professor Babcock.

ACADEMIC REGULATIONS

DEGREE REQUIREMENTS

In order to earn a Bachelor's Degree from the College of Arts & Sciences, the student must complete all the courses prescribed in the curriculum tables (pages 39 to 102). No student will be eligible for graduation who has not removed all failures in required courses or who has not earned the necessary 2.0 (C average) Quality Point Index.

Receipt of the degree is not automatic. Seniors expecting to graduate in the spring should make formal application for the degree during the month of January.

GRADING SYSTEM

Grade reports are mailed to the parent(s) or guardian of all students at the end of each semester and these become part of the official record of the student. The parent(s) or guardian of freshmen receive mid-semester grades to inform them of the progress of the student. The parent(s) or guardian of upperclass students receive notice at the quarter of students who are "deficient" and in danger of failing the course.

A	Excellent (Outstanding and/or original work)
B, B+	Very Good, above average work
C, C+	Satisfactory (Average, but not outstanding work)
D, D+	Unsatisfactory (passing but below average)
F	Failure (below minimum acceptable standards)
W	Withdrew officially during first quarter.
WP	Withdrew officially during second quarter with passing grade.
WF	Withdrew officially during second quarter with failing grade computed in the QPI as an F.
I	Incomplete — must be removed within three weeks.
S	Satisfactory (Pass) } not figured in Quality Point Index
U	Unsatisfactory (Fail) } not figured in Quality Point Index
Audit	Course not taken for credit. (Change to Audit can be made only by passing students.)

INCOMPLETE: If a course has not been completed because of illness or some other serious reason, an Incomplete may be given. To remove this grade, the student must satisfy all course requirements within three weeks after the end of the semester. Any course not completed by this time will result in a grade of F.

QUALITY POINT INDEX

A standard used in judging a student's performance is his quality point index (QPI) determined as follows:

Each semester hour of credit with a grade of A is valued at 4 quality points; B+ at 3.5 quality points; B at 3.0; C+ at 2.5; C at 2.0; D+ at 1.5; D at 1.0. An F or WF (withdrawn failing) yields no quality points. Thus, for example, a three-credit course with the grade A yields 12 quality points; a B yields 9; a C yields 6.

The Quality Point Index (or Quality Point Average) commonly abbreviated QPI (or QPA) is computed by dividing the total number of Quality Points earned by the total number of credits attempted. For example, 15 credit hours, all at C grade, would earn 30 Quality Points or a 2.0 QPI (30/15).

The total number of credit hours attempted include those courses with final grade F or WF as well as A, B, etc. Notice this Quality Point Index applies only to courses taken at the University of Scranton and Marywood College and is not affected by credits transferred from other colleges.

A Quality Point Index listing is made at the end of each semester. On the basis of his cumulative Point Index, a student's rank in class and his eligibility for honors at graduation are determined.

GRADUATION HONORS

To be eligible for graduation honors, a student must have completed a minimum of 100 credit hours of work at the University of Scranton.

Summa Cum Laude ..... 3.85 Quality Point Index in all subjects
Magna Cum Laude ..... 3.60 Quality Point Index in all subjects
Cum Laude ..... 3.30 Quality Point Index in all subjects

DEAN'S LIST

To be eligible for the Dean's List, the student must carry a full program (12 credits minimum). A grade of B or better must be earned in each subject. Names of those on the Dean's List are published each semester.

QUALITATIVE REQUIREMENTS

To graduate from the University of Scranton or to remain as a student in good standing, a Quality Point Index of 2.0 (C grade average) is required.

PROBATION AND DISMISSAL

One semester of probation is granted to students whose QPI falls below 2.0. A second semester of probation will be granted only occasionally when the results of the first probationary semester indicate that the student can and will return to good standing in one more semester. Students who receive an F while on probation are subject to dismissal, as is any student who incurs 2 F's in one semester. Probationary status ordinarily must be removed by attending summer school at the University of Scranton as a condition of retention. During this time the Quality Point Index must be raised over 2.0.

Students on Academic Probation are allowed to take no more than 13 credits during the fall and spring semesters without the explicit approval of the Dean of the College.

CREDIT OVERLOADS

One credit or semester hour represents one lecture period of 50 minutes per week. Two or more hours of laboratory work are equivalent to one lecture hour.

Normal student credit loads are indicated in the departmental curricular models which follow below. Students with QPI between 2.4 and 3.0 are permitted three credits overload with the permission of their faculty advisor. Students with QPI above 3.0 are permitted up to six credits overload. All other requests should be directed to the Dean.

LANGUAGE PLACEMENT

The CEEB Achievement Tests will be used as a placement instrument for students who have completed 2 years or more of a modern foreign language in high school. The department will place the student either in an elementary, intermediate, or advanced course.

WITHDRAWAL FROM A COURSE

A student wishing to withdraw from a course should first discuss the matter with the instructor. There is always a financial loss to the student when he withdraws from a course and the matter should be carefully considered. If the student believes withdrawal necessary, he should obtain the

form for this at the Registrar's Office, have it signed by the instructor and by the Dean of the College and then return the form to the Registrar's Office. Any tuition refund is based on the date on which the completed form is returned to the Registrar's Office. (See the Schedule of Refunds.) Failure to officially withdraw from a course may result in a failing grade for the course.

ABSENCE FROM CLASS

Freshmen are limited by University regulation to twice as many absences as credits are given for a particular course. Thus six cuts are allowed freshmen in most courses. Upperclassmen have unlimited absences unless the particular professor or the department promulgates in writing some other policy on the subject.

Students who exceed the cut policy are subject to a failing grade in the course. All absences, for whatever reasons, are covered by the above regulations.

PROPER ATTIRE

The University expects students in the College of Arts and Sciences to be well groomed and to attend classes attired in a manner appropriate to those preparing for professional careers. Individual departments of the University and administrative officials may give specific interpretations of what constitutes proper appearance for their professional fields and offices.

WITHDRAWAL FROM THE COLLEGE

Student's desiring to withdraw from the College should discuss the matter with the Dean of the College and, if so instructed, must submit a request for withdrawal from parents or guardian. The student should also discuss the question with his counselor. The form for withdrawal can be obtained in the Registrar's office. It must be signed by all of the student's instructors, by the Counseling Center and by the Dean of the College. Similarly, the Dean of Men initials the form to indicate that the student has returned his ID card and the library and treasurer's office initial the form to indicate that the student's financial accounts with the University are settled. Any tuition refund is based on the date on which the completed form is returned to the Registrar's Office.

The University reserves the right to modify the requirements regarding admission; the right to cancel any course for which there is insufficient registration; change the arrangement of courses, the requirements for graduation, degrees, tuition, fees and other regulations affecting the student body. Such regulations shall govern both those presently enrolled and new students and shall be effective whenever determined by the University.

HONOR SOCIETIES

ALPHA SIGMA NU

An international Honor Society, with chapters in 28 Jesuit colleges and universities throughout the United States and Canada. Juniors and Seniors who have distinguished themselves in scholarship, loyalty and service are eligible for this society. Selection is made by the President of the University on the recommendation of the Dean and Chapter members of the Society.

PHI ALPHA THETA

International Honor Society in History. For majors in History. Basic requirements: 12 credits in History; Quality Point Index — General 3.0, 3.1 in History. Chapter members select new inductees. Founded in 1921; the largest honor society in America, with the strictest departmental requirements.

DELTA MU DELTA

National Honor Society in Business Administration. Basic requirements: A Quality Point Index of 3.2 or better for undergraduate students and 3.25 or better for graduate students, with a major in Business Administration or Accounting.

SIGMA PI SIGMA

National Honor Society in Physics. Its chapters are restricted to colleges and universities of recognized standing which offer a strong physics major. The University of Scranton Chapter receives into membership undergraduate and graduate students. Students elected to membership must attain high standards of general scholarship, outstanding achievement in physics, and show promise of professional merit.

OMICRON DELTA EPSILON

National Honor Society in Economics. Basic requirements: 12 credit hours in Economics with a General Quality Point Index of 3.0 and a 3.0 average in Economics.

PSI CHI

National Honor Society in Psychology. Founded in 1931, it has established chapters in 260 colleges and universities in 47 states. About 45% of its active members are undergraduates majoring or minoring in psychology. The remaining members are psychology graduate students and faculty members. A high standard of academic achievement is expected of all members.

PI GAMMA MU

National Honor Society in Social Science. Founded in 1924; purpose is to improve scholarship in the social sciences and to encourage inter-disciplinary study. Basic requirements: at least 20 credit hours in social science; Quality Point Index of 3.0.

The University's new Communication Laboratories in Loyola Hall of Science are equipped with remote-control and portable television equipment used to videotape student work in the fields of oral communication, debate and radio workshops. Shown here at the camera are Professor Ed Warner, Director of the Oral Communication Center, and Professor William Rakauskas, Director of the Writing Center.

DEPARTMENTAL PROGRAMS AND COURSES

INTERDISCIPLINARY COURSES

INTD. 2
The Problem of Alienation in French and American Literature 3 credits
Dr. Petrovic, Prof. of French; Prof. O'Rourke, Dept. of English
A comparative study of alienation as theme in contemporary American and French literature through reading, discussion, and analysis of such masterpieces as: Hemingway's *The Sun Also Rises*, Salinger's *Catcher in the Rye*, Miller's *Death of a Salesman*, Camus' *The Stranger*, Mauriac's *Therese Desqueyroux*, Gide's *The Immoralist*.

INTD. 3
The Nature of Nature 3 credits
Dr. Fahey, Dept. of Physics; Dr. Fairbanks, Dept. of Philosophy
An approach to the Physical Sciences which gets away from the "hard" science mathematical approach and instead looks at the effect of science on man and his environment. A better knowledge of the impact of science on man is gained by looking at the development of science from an historical point of view. Team-taught by physics and philosophy department; includes some laboratory demonstrations.

INTD. 4
Black Studies 3 credits
Dr. Mitchell, Dept. of English; Prof. Casey, Dept. of Theology
This course will deal with the black experience from the standpoint of the disciplines of literature, theology and related social sciences. The course is directed towards an exploration of the total American context of the black experience.

INTD. 5
Latin American Civilization 3 credits
Prof. Bernard Williams, Dept. of History; Dr. Zela-Koort, Prof. of Spanish
An introductory course designed to offer a general knowledge of Latin-American civilization and to achieve a better understanding of its peculiar characteristics, emphasizing its racial and linguistic diversity as well as the historic, economic and cultural relationships with the United States.

INTD. 7
Theater of the Western World 3 credits
Prof. Bourcier, Modern Languages Department; Fr. Young, S.J., Classics Department
A course designed to develop appreciation of the Western dramatic tradition from Greco-Roman times to the classical age of 17th Century France. Selected plays will focus on the themes of love, hate, ambition and pride. Plautus, Moliere, Euripides are among the dramatists studied.

INTD. 8
Dissent of the Intellectuals in Communist Society 3 credits
Dean Parente, Dept. of Political Science; Prof. Petrovic, Dept. of Modern Languages
A study of literary dissent by intellectuals in communist political systems. East European, Soviet and Chinese literature is read. Nobel Prize winner Solzhenitsyn's writings, as well as those of Djilas and other East European writers, are covered.

INTD. 9
Germanic Civilization 3 credits
Dr. Brunner and Professor Granville, Department of Modern Languages
Orientation to the study and appreciation of German culture, civilization, language, music, films, etc. Presentation and analysis of representative literary works, trends and major figures. All readings are in English. Films, slides, records, etc. are used.

INTD. 10
Politics of Higher Education
Dean Strickland of the Graduate School, Department of Business; interdisciplinary faculty, administrators, and students
Introduction to the challenges and internal stresses confronting university communities: financial challenges confronting public and private higher education; problems and opportunities of increased faculty and student participation in university governance; curricular innovations; other trends in university life.

INTD. 11
Contemporaneous Man
Interdisciplinary Faculty
Readings and discussion of current fiction and non-fiction which expresses the problems and opportunities confronting contemporary man: Teilhard de Chardin's *The Future of Man;* Toffler's *Future Shock;* McInnis's *The Selling of the President;* etc. Faculty from several academic departments will discuss a different work with students each week.

INTD. 12
Nazism: The Burden of Guilt 3 credits
Dr. Homer, Department of History; Mr. Granville, Professor of German
An examination of the cultural, social and political conditions out of which the German dictatorship developed and an analysis of the impact of the Hitler years upon German culture and society.

INTD. 14
Irenology: Study of World Justice and Peace 3 credits
This seminar, sponsored by the Campus Ministry, examines violent inter-group conflict on the international, national and local levels. Drawing upon philosophy, religion, political science, military science and psychology, it seeks to search out the dimensions of peace, justice, pacifism, human conflict and disorder. The broad variety of academic disciplines will be brought to bear on Irenology through formal presentations and faculty-student discussions.

COMMUNICATION 7
The Dynamics of Human Behavior
An introduction to the causes and consequences of the individual's behavior, through the critical study of developmental principles; learning theory; and inter-personal relationships. College survival techniques are taught by increasing reading skills, study skills, library skills and individual personality assessment. Group processes are an important part of this offering. This course is limited to the students in the Academic Development Program.

NATURAL SCIENCE 1
The Nature of Nature 3 credits
(See description above for Intd. 3)

NATURAL SCIENCE 2
The Physical Sciences 3 credits
Continuation of Natural Science I—Electricity and Magnetism. Theory of Relativity, determinism, and modern physics, the Bohr atom, wave mechanics, radioactivity and the nucleus, nuclear power, the scientific method, science and the progress of man are covered. A weekly period is set aside for problef solving, experimentation, and introduction to the mathematical methods necessary for the course.

NATURAL SCIENCE 3-4
The Life Sciences 6 credits
The course presents modern scientific principles and methods with a historical philosophical approach within the context of modern man and his environment. The course emphasizes the conceptual and analytical approach to systems and their inter-relationships built upon the principles of chemistry and physics learned earlier, and is therefore more biochemical, biophysical and physiological than descriptive or anatomical.

NATURAL SCIENCE 101
Science and the Human Environment 3 credits
A brief study of the effects of the technological, scientific and industrial progress on the air, land and water resources of the human environment. Problems in each of the resource areas will be discussed in some detail. This course is conducted on a lecture-demonstration basis.

BIOLOGY

DR. EVANS, *Chairman*

Courses in the Department of Biology are designed to achieve the following objectives: 1. to present the fundamental scientific facts and concepts which are needed for an understanding of the living world and man's relation to it; 2. to prepare students for advanced study or work in other biological fields.

The Bachelor of Science in Biology Program supplies preprofessional preparation meeting all requirements and recommendations of professional schools (medicine, dentistry, veterinary medicine)

	Dept. and No.	Descriptive Title of Course	Credits FALL	SPRING
		FRESHMAN		
MAJOR	Biol. 1-2	General Biology I-II	4	4
COGNATE	Chem. 11-12	General & Analytical Chemistry	4	4
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/R S	Theology/Religious Studies		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed 1-2	Basic Physical Education	1	1
			15	18
		SOPHOMORE		
MAJOR	Biol. 21-22	Comp. Vertebrate Anatomy (Genetics)	4	4
COGNATE	Chem. 101-102	Organic Chemistry I-II	4	4
COGNATE	Math 13-14 or Math. 14-21	Pre-Calculus Math.—Calculus I Calculus I-II	4	4
GE AREA III	Communications	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			19	19
		JUNIOR		
MAJOR	Biology	Biology Electives	3	3
COGNATE	Chem. 120	Physical Chemistry Fundamentals	4	
COGNATE	Physics 1-2	General Physics	4	4
GE AREA II	Social/Behavior	Electives	3	3
GE AREA III	Communications	Elective	3	
GE AREA V	Phil. 110	Philosophy of Human Conduct		3
GE AREA V	T/R S	Theology/Religious Studies Elective		3
GE FREE	Elective	Elective		3
			17	19
		SENIOR		
MAJOR	Biology	Biology Electives	6	6
GE AREA II	Social/Behavior	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil-T/RS	Philosophy and/or Religious Studies	3	3
			15	15

Departmental General Education Recommendations:
6 credits English from AREA IV
12 credits language from AREA III and FREE AREA

TOTAL: 137 credits

BIOL. 1 & 2
General Biology 8 credits
A comprehensive study of the nature of living organisms, both plant and animal, their structure, function, development and relationships, including the problems of development, heredity and evolution. 2 hours lecture and four hours laboratory each semester

BIOL. 3 & 4
General Biological Science 6 credits
The nature of living organisms and general biological principles, as they affect man and in relation to his problems, are stressed in general terms.

BIOL. 21 & 22
Comparative Vertebrate Anatomy 8 credits
(Prerequisite: Biology 1-2) Structure and phylogeny of vertebrate organ-systems, emphasizing mammalian structure and correlation with function. Shark, necturus, turtle, pigeon, cat subjected to detailed laboratory study. 2 hours lecture and 4 hours laboratory each semester.

BIOL. 23
Genetics 3 credits
(Prerequisite: Biology 1-2 or 3-4) Principles and theories of heredity as developed by experimental breeding, biometrical and cytological methods with their applications to plant, animal and human heredity. 2 hours lecture and 3 hours laboratory.

BIOL. 101
Cellular Biology 3 credits
(Prerequisite: Biology 1-2 or 3-4) Morphology, physiology and biochemistry of the cell as the basic unit in all living organisms and a unifying theme of life. 2 hours lecture and 3 hours laboratory.

BIOL. 103
Histology 3 credits
(Prerequisite: Biology 21-22) The microscopic structure and the functioning relationships of vertebrate tissues and organs with most attention devoted to the mammal. 2 hours lecture and 3 hours laboratory.

BIOL. 104
Microtechnique 3 credits
(Corequisite: Biology 103) General and special methods in the preparation of animal and plant cells and tissues for microscopic study. 1 hour lecture and 4 hours laboratory.

BIOL. 105
Embryology 3 credits
(Prerequisite: Biology 21-22) Comparative study of reproduction, gametogenesis, fertilization, cleavage, morphogenesis, development of organ-systems in frog, chick and pig. 2 hours lecture and 3 hours laboratory.

BIOL. 106
Principles of Heredity 3 credits
A less technical presentation of the principles and concepts of heredity, stressing their practical applications to the problems of plant, animal and human inheritance. 2 hours lecture and 3 hours laboratory.

BIOL. 107
Anatomy & Physiology 3 credits
Fundamentals of structure and function of the human body to develop an understanding of its physical nature and operation.

BIOL. 108
Field Biology 3 credits
(Prerequisite: Biology 3-4) Study of living organisms in relation to each other and to all aspects of environment, together with techniques for collecting and maintaining living organisms. 2 hours lecture and 3 hours laboratory.

BIOL. 120
General Physiology 3 credits
(Prerequisites: Biology 21-22, Chem. 101-102, Phys. 1-2) Physiological processes underlying the functioning of the animal organism. Biochemistry of protoplasm, enzymes, irritability, excitation, conduction, contractility, cellular physiology, and functions of mammalian organ-systems. 2 hours lecture and 3 hours laboratory.

BIOL. 121
Microbiology 3 credits
(Prerequisites: Biology 21-22, Chem. 101-102, Phys. 1-2) Structure, function, growth, reproduction, heredity and relationships of bacteria, yeasts, molds, virus, including a brief survey of pathogens, and life cycles of parasitic microzoa, and also an introduction to disease and immunology. 2 hours lecture and 3 hours laboratory.

BIOL. 134
Undergraduate Research Variable credit
(Prerequisites: 12 credits in Biology, Chemistry 101-102, Physics 1-2) Individual problems for advanced students with sufficient background in biological and physical sciences. Subject time and credits arranged individually.

BIOL. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor.

BUSINESS

DR. ZANDARSKI, *Chairman*

The Business curriculum offers the student a firm foundation in the liberal disciplines as well as a thorough understanding of the Business and Social Science areas. Individuality of thought and expression needed for civic and industrial leadership, and the broad knowledge of economics and business necessary for executive responsibility are stressed.

The Bachelor of Science degree program offers concentrations in Accounting and Business Administration or the student may arrange with the approval of the chairman to follow other specialized programs of concentration. The Internship Program for Accounting Majors is described on page 30. The five-year MBA Program is described on page 29.

ACCOUNTING CONCENTRATION

	Dept. & No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Bus. 1-2	Elementary Accounting I-II	3	3
COGNATE	Math. 3-4	Quantitative Methods I-II	3	3
GE AREA III	Communications	Elective	3	
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	Bus. 22-21	Managerial Acctg.-Intermediate Acctg.	3	3
MAJOR	CMPSC 26	COBOL Programming		3
COGNATE	Econ. 11-12	Inquiry into Modern Economics I-II	3	3
GE AREA II	Bus. 8-107	Evolution of Mngt. Thought-Marketing*	3	3
GE AREA III	CMPSC 21	Introduction to Computer Science*	3	
GE AREA III	Elective	Elective		3
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Bus. 111-112	Advanced Accounting I-II	3	3
MAJOR	Bus. 13-14	Business Law I; Law for the Accountant	3	3
COGNATE	Bus. 105-106	Business Statistics I-II	3	3
GE AREA II	Psych. 23-149	Fundamentals of Psych-Industrial Psych.*	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 133	Business Ethics*	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
			18	18
		SENIOR		
MAJOR	Bus. 113-114	Cost Accounting I-II	3	3
MAJOR	Bus. 121-123	Auditing Theory-Federal Taxation	3	3
COGNATE	Bus. 103-126	Money & Credit-Corporation Finance	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies		3
FREE AREA	Elective	Elective	3	
			15	15

TOTAL: 130 credits

BUSINESS ADMINISTRATION CONCENTRATION

	Dept. & No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Psych. 23	Fundamentals of Psychology	3	
MAJOR	Bus. B	Evolution of Management Thought		3
COGNATE	Bus. 1-2	Elementary Accounting	3	3
GE AREA I	Math. 3-4	Quantitative Methods I-II*	3	3
GE AREA III	Communications	Elective	3	
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
COGNATE	CMPSC 21	Introduction to Computer Science I	3	
GE AREA III	CMPSC 27	Introduction to Data Processing*		3
COGNATE	Bus. 108-107	Business Organization & Mngt.-Marketing	3	3
COGNATE	Econ. 11-12	Inquiry into Modern Economics I-II	3	3
COGNATE	Soc. 21 or Psych. 148	Principles of Sociology or Social Psych.	3	
GE AREA I	Bus. 22	Managerial Accounting*	3	
GE AREA III	Communications	Elective		3
GE AREA IV	Humanities	Elective		3
PHYS EDUC	Ph. Ed.	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Bus. 13-16	Business Law I-Law for the Administrator	3	3
MAJOR	Bus. 105-106	Business Statistics I-II	3	3
MAJOR	Bus. 170-171	Marketing Mngt.-Financial Mngt.	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct		3
GE AREA V	T/RS	Theology/Religious Studies Elective	3	
GE FREE	Elective	Elective	3	
			18	15
		SENIOR		
MAJOR	Bus. 103-126	Money and Credit-Corporation Finance	3	3
MAJOR	Bus. 172-160	Administrative Practices-Bus. Decisions	3	3
GE AREA IV	Humanities	Electives	3	6
GE AREA V	Phil. 133	Business Ethics*	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Elective	Elective	3	
			15	15

TOTAL: 127 credits

In both concentrations, departmental recommendations are indicated by an asterisk. Additionally, for both concentrations, the department recommends students take Oral Communication Center (English 2) and Writing Center (English 7) as their Communications Electives in the first two years unless exempted from the communications skill requirement beforehand because of Advanced Placement or extensive extra-curricular experience in these areas.

In the General Education Area IV electives (18 credits), the department recommends that 6 credits be given to English 25, 26, or 27.

BUS. 1
Elementary Accounting I 3 credits
An introductory course designed to give an overall view of the principles, methods, purposes and procedures of accounting including financial statements, theory of accounts, journalizing, posting, periodic summary of data, special journals, adjusting entries, receivable and inventories. 3 hours lecture and 1 hour laboratory.

BUS. 2
Elementary Accounting II 3 credits
(Prerequisite: Business I) A study of the principles of accounting for plant assets-depreciation, the voucher system, property and sales taxes, payrolls, partnerships and corporations. 3 hours lecture and 1 hour laboratory.

BUS. 8
Evolution of Management Thought 3 credits
An investigation of the foundations of management theory necessary for an understanding of current management knowledge. The student will be prepared to evaluate management literature and practices by studying the writings of various authors.

BUS. 13
Business Law I 3 credits
Introduction to the study of law, its nature and administration. The law of contracts, sales, transportation and storage of goods.

BUS. 14
Law for the Accountant 3 credits
(Prerequisite: Business 13) A study of the laws of credit transactions, negotiable instruments, agency, employer-employee relationships, insurance and real property.

BUS. 16
Law for the Business Administrator 3 credits
A study of corporations, management of corporations, agency, employer-employee relations, labor law, government regulations, insurance and commercial paper.

BUS. 21
Intermediate Accounting 3 credits
(Prerequisite: Business 2) A comprehensive study of contemporary accounting theory, concepts and procedures and their application to financial reporting. 3 hours lecture and 1 hour laboratory.

BUS. 22
Management Accounting 3 credits
(Prerequisite: Business 2) A study of selected accounting techniques required in compiling and interpreting financial data for managerial decision-making. 3 hours lecture and 1 hour laboratory.

BUS. 103
Money and Credit 3 credits
(Prerequisite: Economics 11) A survey of money, credit and prices and their effects on economic stability. Credit controls by the Federal Reserve System.

BUS. 105
Business Statistics I 3 credits
(Prerequisite: Economics 11-12) Statistical investigations. Use of mechanical equipment. Sampling and concept of error. Presentation of data. Frequency distributions. Averages. Dispersion and skewness. 3 hours lecture and 1 hour laboratory.

BUS. 106
Business Statistics II 3 credits
(Prerequisite: Business 10S) Introduction to the theory of probability. Index numbers Time series analysis. Correlation and forecasting. 3 hours lecture and 1 hour laboratory.

BUS. 107
Marketing 3 credits
(Prerequisite: Economics 11-12) Product distribution from its inception to ultimate use by consumer. Market research and analysis. Channels of distribution.

BUS. 108
Organization and Management 3 credits
(Prerequisites: Business 8 or Economics 12) The major concepts of managerial action deal with planning, organizing, directing and controlling. Knowledge of these key aspects of the management process will provide the student with a framework for decision making.

BUS. 111
Advanced Accounting I 3 credits
(Prerequisite: Business 21) A study of advanced accounting concepts including partnerships, installment sales, consignments, fiduciaries and fund accounting. 3 hours lecture and 1 hour laboratory.

BUS. 112
Advanced Accounting II 3 credits
(Prerequisite: Business 21) Accounting procedures applicable to multiple business units including home office and branch, business combinations and consolidated statements. 3 hours lecture and 1 hour laboratory.

BUS. 113
Cost Accounting I 3 credits
(Prerequisite: Business 22) Introduction to the concepts of cost accounting, job order costs including a detailed treatment of materials, labor and overhead accounting procedures. 3 hours lecture and 1 hour laboratory.

BUS. 114
Cost Accounting II 3 credits
(Prerequisite: Business 113) A continuation of cost accounting including Process Costing, Joint and By-Products, Estimated Cost Systems, Standard Costs, and Budgeting. 3 hours lecture and 1 hour laboratory.

BUS. 121
Auditing Theory 3 credits
(Prerequisite: Business 21) A review of generally accepted accounting principles and applicable auditing principles, standards and procedures. Auditing original records and assets. Emphasis placed on automation and the examination of electronically prepared records. Preparation of work papers. 3 hours lecture and 1 hour laboratory.

BUS. 123
Federal Taxes 3 credits
An introductory course covering pertinent phases of federal income taxation. Emphasis on business transactions, preparation of individual, partnership and corporate returns and finding the answers to federal tax questions.

BUS. 126
Corporation Finance 3 credits
(Prerequisite: Economics 12) The financial structure and problems of business corporations. Promotion. Investment banking. The security markets. Expansion, failure, reorganizations and receiverships.

BUS. 160
Business Decision Making 3 credits
(Prerequisites: Economics 11 & 12, Business 170 & 172) An integrating course designed to formulate and evaluate business decisions and policies with respect to company operations. The case method, role playing, and a business game will be used to supplement readings.

BUS. 170
Marketing Management 3 credits
(Prerequisite: Business 107) Managerial problems of product development and distribution. Product promotion. Personal and mass distribution. Pricing.

BUS. 171
Financial Administration 3 credits
(Prerequisites: Economics 11 and 12) Functions of banking, monetary and financial institutions and their use by business.

BUS. 172
Administrative Practices 3 credits
(Prerequisite: Business 108) Human behavior within the organization structure is examined by surveying current theories and practices. The case method will be utilized to present examples of corporate situations.

BUS. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor.

BUS. 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in Business. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department.

Dr. Joseph Zandarski, Chairman, Department of Business

CHEMISTRY

DR. BURTI, *Chairman*

The aims of the department are to train the student in analytical skills, scientific methodology and the character traits indispensable to the scientist as well as to prepare him for a position of responsibility, as an advanced student in a graduate or professional school or as a member of the staff of an educational, industrial or research institution.

In the last academic year, seniors graduating from the department were admitted to Hershey Medical School and awarded fellowships toward the pursuit of Ph.D. degrees at Yale and University of Massachusetts among other institutions.

The department offers three concentrations: Chemistry, Biochemistry, and Medical Technology. The program in Chemistry is accredited by the American Chemical Society. In addition, the Chemistry and Biochemistry concentrations are offered in conjunction with the Graduate School in five-year B.S.-M.A. degree programs.

CHEMISTRY CONCENTRATION

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Chem. 11-12	General Analytical Chemistry I-II	4	4
COGNATE	Math. 13-14	Pre-Calculus Math & Calculus I	4	4
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			15	18
		SOPHOMORE		
MAJOR	Chem. 101-102	Organic Chemistry I-II	4	4
COGNATE	Math. 21-22	Analysis II-III	4	4
COGNATE	Physics 11-12	Elements of Physics	4	4
GE AREA II	Social/Behavior	Elective		3
GE AREA III	Communications	Electives	6	3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			19	19
		JUNIOR		
MAJOR	Chem. 103-125	Organic Chem III - Instrumental Analysis	4	4
MAJOR	Chem. 123-124	Physical Chemistry I-II	4	4
MAJOR	Chem. 127-128	Chemical Literature - Seminar	1	1
GE AREA II	Social/Behavior	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
			18	18
		SENIOR		
MAJOR	Chemistry	Electives in Chemistry	3	3
GE AREA II	Social/Behavior	Elective	3	
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil-T/RS	Philosophy and/or Religious Studies	3	3
GE FREE	Elective	Elective		3
			12	12

TOTAL: 131 credits

Majors meeting all requirements of the American Chemical Society require four credits of chemistry in addition to the above; these are taken in senior year. Among the electives to be taken are Chem. 129, 130, 136; additionally Chem. 132 is strongly recommended.

BIOCHEMISTRY CONCENTRATION

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Chem. 11-12	General Analytical Chemistry I-II	4	4
COGNATE	Biol. 1-2	General Biology I-II	4	4
GE AREA III	Communications	Elective	3	
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T RS	Theology/Religious Studies		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			15	15
		SOPHOMORE		
MAJOR	Chem. 101-102	Organic Chemistry I-II	4	4
COGNATE	Biol. 121-120	Microbiology—General Physiology	3	3
COGNATE	Math. 13-14	Pre-Calculus Math & Calculus I	4	4
GE AREA III	Communications	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			18	18
		JUNIOR		
MAJOR	Chem. 103-125	Organic Chemistry III—Instrumental Analysis	4	4
MAJOR	Chem. 127-128	Chemical Literature—Seminar	1	1
COGNATE	Phys. 1-2	General Physics	4	4
GE AREA II	Social Behavior	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct		3
GE AREA V	T RS	Theology Religious Studies Elective	3	
			18	18
		SENIOR		
MAJOR	Chem. 113-114	Biophysical Chemistry I-II	4	4
MAJOR	Chem. 121-122	Biochemistry I-II	3	3
GE FREE	Elective	Elective	3	
GE AREA II	Social Behavior	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil-T RS	Philosophy and or Religious Studies	3	3
			19	16

TOTAL: 137 credits

The Bachelor of Science in Biochemistry Program parallels the B.S. in Medical Technology for the first two years so that opportunity is afforded the student to change from one program to the other.

In both the Chemistry and Biochemistry Program, the departmental General Education Area recommendations are: 6 credits of modern language from Area III or Free Area; 3 credits of Computer Science 20 from Area III; English or history electives from Area IV.

B.S. IN MEDICAL TECHNOLOGY CONCENTRATION

The Bachelor of Science in Medical Technology degree program is designed to train and qualify students as Medical Technologists to serve in hospitals or clinical laboratories. The program meets and exceeds the requirements of the American Society of Clinical Pathologists (A.S.C.P.).

The program involves the satisfactory completion of the first three years of a curriculum of study (indicated below) at the University of Scranton and the fourth year of Internship at a hospital having a School of Medical Technology approved by the A.S.C.P. and affiliated with the University. To date the University has arranged affiliation with hospitals in such cities as Scranton, New York, Allentown, Bryn Mawr, Williamsport, Rochester, Patterson, Troy, etc.

The curriculum for the B.S.M.T. parallels the B.S. in Biochemistry program so that the student has the option to change to the latter after three years in the technology program, should he decide on graduate studies rather than laboratory work. Further information on both of the programs can be gained by writing the Director of Admissions or chairman of the Chemistry Department.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Chem. 11-12	General Analytical Chemistry I-II	4	4
COGNATE	Biol. 1-2	General Biology I-II	4	4
GE AREA III	Communications	Electives	3	3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			15	18
		SOPHOMORE		
MAJOR	Chem. 101-102	Organic Chemistry I-II	4	4
COGNATE	Biol. 121-120	Microbiology - General Physiology	3	3
COGNATE	Math. 13-14	Pre-Calculus Math - Calculus	4	4
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			18	18
		JUNIOR		
MAJOR	Chem. 121-125	Biochemistry I - Instrumental Analysis	3	4
COGNATE	Phys. 1-2	General Physics	4	4
COGNATE	Biology	Elective	3	
GE AREA II	Social/Behavior	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil.-T/RS	Electives	3	3
			19	17
		SENIOR		
		Internship-Hospital		
MAJOR		Chemistry	3	3
MAJOR		Hematology	3	3
MAJOR		Serology	2	2
MAJOR		Urinalysis	2	2
COGNATE		Bacteriology	2	2
COGNATE		Blood Bank	2	2
COGNATE		Histology	2	2
			16	16

TOTAL: 137 credits

As Communications Electives, English 2 and English 7 are recommended.
As Social Science Electives, at least one course in psychology is recommended.

CHEM. 11 & 12
General and Analytical Chemistry 8 credits
A study of the laws, theories and principles of general chemistry together with qualitative and quantitative analysis. Laboratory work covers semi-micro techniques for qualitative analysis and gravimetric and volumetric analysis. 3 hours lecture and 3 hours laboratory each semester.

CHEM. 101 & 102
Organic Chemistry I-II 8 credits
(Prerequisites: Chemistry 11-12) An introduction to the chemistry of the principal aliphatic and aromatic compounds of carbon and their derivatives. Laboratory work includes investigation of the chemical properties and synthesis of the compounds studied. 3 hours lecture and 3 hours laboratory each semester.

CHEM. 103
Organic Chemistry III 4 credits
(Prerequisites: Chemistry 101-102) A continuation of Chemistry 101-102, emphasizing the study of the major types of organic mechanisms. Laboratory work involves advanced techniques. 2 hours lecture and 6 hours laboratory.

CHEM. 113
Biophysical Chemistry I 4 credits
(Prerequisite: Chemistry 101-102) An introduction to the application of physical-chemical principles to biological problems. This involves aqueous solutions, colloidal chemistry, thermodynamics, electro-chemistry, chemical kinetics and nuclear chemistry. Laboratory work involves mainly experiments dealing with colloidal phenomena, chemical kinetics and nuclear chemistry. 3 hours lecture, 3 hours laboratory.

CHEM. 114
Biophysical Chemistry II 4 credits
(Prerequisite: Biophysical Chemistry I) A study of the bioenergetics, enzyme kinetics and cryo-biochemistry as related to cellular phenomena. Laboratory work includes enzyme kinetics, energetics and special projects. 3 hours lecture, 3 hours laboratory.

CHEM. 121
Biochemistry I 3 credits
(Prerequisites: Chemistry 102 & 124) Principles of biochemistry and biophysical chemistry, including enzyme kinetics. A study of the chemical nature of lipids, carbohydrates, proteins, nucleic acids and enzymes including relationships between vitamins, hormones and inorganic compounds. 3 hours lecture.

CHEM. 122
Biochemistry II 3 credits
(Prerequisite: Chemistry 102 & 124) A study of the metabolism, digestion and absorption of carbohydrates, lipids, amino acids and proteins, including energy transformations together with the role of enzyme systems in the above processes. 3 hours lecture.

CHEM. 123 & 124
Physical Chemistry I-II 8 credits
(Prerequisites: Chemistry 11-12, Mathematics 21-22) A study of the physicochemical properties of matter and the dynamics of chemical reactions. Laboratory experiments illustrate the principles studied. 3 hours lecture and 3 hours laboratory each semester.

CHEM. 125
Instrumental Analysis 4 credits
(Prerequisite: Chem. 123) Instrumental methods of analysis consisting of theory and application of such instrumental techniques as spectroscopy, polarography, and instrumental titrimetry. Laboratory stresses instrumental analysis and techniques. 2 hours lecture and 6 hours laboratory.

CHEM. 127
Chemical Literature 1 credit
A study of the published source material of chemical science and chemical industry. The course includes practical instruction in library technique. 1 hour lecture.

CHEM. 128
Seminar 1 credit
(Prerequisites: Chemistry 101-102, 123-124) A discussion of advanced topics in chemistry for students majoring in chemistry. Assignments will be made from various areas of chemistry, and full discussion by the participants is expected. 1 hour each week.

CHEM. 129
Physical Chemistry III 3 credits
(Prerequisites: Chemistry 124) Special topics, including classical and quantum statistics and thermodynamics, molecular and solid state structure and quantum chemistry. 3 hours lecture.

CHEM. 130
Inorganic Chemistry 3 credits
(Prerequisite: Chemistry 124) Descriptive chemistry of selected elements and their compounds, correlated with the periodic table, physical properties, atomic and molec-

Charles Thoman, S.J., Ph.D., Department of Chemistry

ular structure, bonding and the ligand theory. 3 hours lecture.

CHEM. 132
Undergraduate Research 2 credits
(Prerequisites: Chemistry 103, 124 & 127) Individual study and research in connection with a specific chemical problem. The course taken with the permission of the Chemistry Department Staff.

CHEM. 136
Physical Organic Chemistry 4 credits
(Prerequisites: Chemistry 103, 123, 124) Methods of determining mechanisms of organic reactions involving identification of intermediates and products, the study of catalysis isotope labeling and interpretation of stereochemical and kinetic evidence. Laboratory stresses methods of analysis based mainly on the constitutive physical properties of organic compounds and kinetic studies for the purpose of determining organic reaction mechanisms. 2 hours lecture, 6 hours laboratory.

CHEM. 147-148
Intermediate Physical Chemistry 6 credits
A review of the fundamentals of Chemical Principles, and a treatment of the Mathematics requisite for such review. This course is designed for prospective Graduate Students in the M.S. and M.A. programs in Chemistry with a deficiency in Physical Chemistry and Calculus. 2 Semesters.

CHEM. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor. Maximum enrollment 3 students.

CHEM. 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in Chemistry. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department.

COMPUTER SCIENCE

MR. PLONSKY, *Director*

A computer science major is committed to the study of the transformation, storage, and representation of information structures utilizing automatic computing machines.

The strength of the department is indicated by its Summer Institute in Computer Science for Secondary School Teachers funded by the National Science Foundation.

Because of the diverse uses of computing, a limited set of cognates cannot be designated. The student desiring to obtain a B.S. in Computer Science will choose his cognates in consultation with his advisor. Thus, a student who wishes to direct his computing knowledge to the solution of business problems would take as cognates such courses as statistics, accounting, management, and economics.

The computer science department offers courses designed to meet the needs for training in computer science of students in many disciplines.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	CMPS 20 (21)-25	Introduction/Algorithmic Processes	3	3
COGNATE	Math. 3-4 or 14-21	Quantitative Methods or Calculus I-II	3/4	3/4
GE AREA III	Communications	Electives	3	3
GE AREA IV	Humanities	Elective		3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology or Religious Studies		3
GE FREE	Intd.	Interdisciplinary Elective	3	
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16/17	16/17
		SOPHOMORE		
MAJOR	CMPS 100-110	Assembly Lang. Prog. - Data Structures	3	3
COGNATE	Elective	Electives	3/4	3/4
GE AREA II	Social/Behavior	Electives	3	3
GE AREA III	Communications	Elective	3	
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Theology	Elective		3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16/17	16/17
		JUNIOR		
MAJOR	CMPS 101-Elective	Systems Organ. & Programming-Electives	3	9
COGNATE	Electives	Electives	3	3
GE AREA II	Social/Behavior	Electives	3	3
GE AREA IV	Humanities	Elective	3	
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE FREE	Elective	Elective		3
			15	18
		SENIOR		
MAJOR	CMPS 120-Elective	Computer Projects-Electives	6	6
COGNATE	Electives	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies	3	3
			15	15

TOTAL: 127-131 credits

General Education recommendation: for AREA III, English 2 (Oral Communication Center) and English 7 (Writing Center) are recommended except for students with Advanced Placement in English or extensive high school experience in speech and writing.

CMPS 20
Introduction to Computer Science I 3 credits
An introduction to computer programming using the FORTRAN compiler. Included in this course are the concepts of flow-charting, algorithms as well as various programming techniques. Applications from mathematics and the natural sciences will be emphasized. Prerequisite: None. Lab. Fee: $30.00.

CMPS 21
Introduction to Computer Science I 3 credits
This course is basically the same the CMPSC 20 except that a business oriented compiler will be used and applications from the social sciences, business, and accounting will be emphasized. Lab. Fee: $30.00.

CMPS 25
Algorithmic Processes 3 credits
This course will emphasize non-numeric computer applications. Among the concepts discussed will be the implementation of queues, pushdown stores, and tree structured data. Prerequisite: CMPS 20/21. Lab. Fee: $30.00.

CMPS 26
COBOL Programming 3 credits
The study and implementation of COBOL programming language used primarily for business data processing with an automatic digital computer. For accounting majors. Prerequisite: CMPS 20/21. Lab. Fee: $30.00.

CMPS 27
Introduction to Data Processing 3 credits
An introduction to the fundamentals of business oriented data processing. This includes the study of methods used to obtain, digitize, analyze, and collate data in a business environment so that this data can be used efficiently in daily transactions as well as in long and short term decision-making. Prerequisite: CMPS 20/21. Lab. Fee: $30.00.

CMPS 100
Assembly Language Programming 3 credits
An introduction to assembler programming. Among the topics discussed will be machine organization, the representation of data, the assembler, input-output routines and the use of macros. Prerequisite: CMPS 20/21. Lab. Fee: $30.00.

CMPS 101
Systems Organization and Programming 3 credits
The analysis and design of computer systems including debugging, operating system design and the implementation of multiprogramming. Prerequisite: CMPS 100.

CMPS 110
Data Structures 3 credits
The representation and transformation of information. This course stresses the interrelation between data structure and program structure. Formal descriptions of various data structures will be studied as well as the methods needed to assess them. Included will be an elementary discussion of compiler structure. Prerequisite: CMPS 100.

CMPS 120
Computer Projects 3 credits
In this course students present computer projects of their choice to be evaluated by the instructor and their fellow students.

CMPS 130
Numerical Computation 3 credits
Techniques of numerical integration and differentiation, differential and difference equations and error analysis. Prerequisite: Math 22 and CMPS 20.

CMPS 131
Matrix Computation 3 credits
Algorithms for solving linear equalities and inequalities, and matrix manipulation techniques and error analysis. Prerequisite: Math 111 and CMPS 20/21.

CMPS 140
Foundations of Computer Science 3 credits
An introduction to the foundations of computer science taken from logic, recursive function theory, turning machines, automata theory, and formal language theory.

CMPS 150
Compiler Theory and Programming Languages 3 credits
A formal description of computer languages, compiler structure and techniques. Topics to be discussed include syntax, semantics, ambiguities, list structures, push-down stacks, string and formula manipulation. Prerequisite: CMPS 110.

CMPS 160
Formal Language Theory 3 credits
A development of a precise notion of computability and the relationship to turing computable and recursive functions. Prerequisite: CMPS 140.

CMPS 191-192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students. Contents determined by mentor.

CMPS 195-196
Senior Tutorial Variable credit
A tutorial program open to senior Honor students majoring in Computer Science.

ECONOMICS

DR. ZANDARSKI, Chairman

Courses in economics are designed to provide the terminal student and the prospective graduate student with a solid understanding of the economic forces which are part of the structure of our society, with some concentration in one of the following areas: (1) Economics of the firm, (2) Economics of the nation, (3) Economics of the world. Courses are also designed to provide a basic understanding of economic theory for students from other disciplines

Candidates for the Bachelor of Science Degree in Economics must take the following courses in Economics: Econ. 11, 12, 13, 102, 115, 116, 181. Each student must take three courses in one of the following concentrations: Economics of the Firm — Econ. 121, 122, 129; Economics of the Nation — Econ. 151, 155, 159; Economics of the World — Econ. 161, 165, 169.

The Economics Major will also be required to take two additional courses in economics which can be chosen from: Econ. 120; an interdisciplinary course involving economics; the other economics concentrations.

Cognate areas for Economics Majors are: Accounting, Business Administration, Computer Science, Political Science, Sociology, and Statistics.

Note: Students should be careful in scheduling the following: Econ. 102, 159, 161 and 181 are offered only in academic years beginning with an odd numbered year, e.g., 1971-72. Econ. 115, 116, 151, 155, 165 and 169 are offered only in academic years beginning with an even number, e.g., 1972-73

Professor George Babcock, Department of Economics

ECON. 11
Inquiry Into Modern Economic Society I 3 credits

This course uses the inquiry approach. It will center on the determinants of aggregate economic activity. The main areas studied are the monetary and banking system, the composition and fluctuations of national income, all as influenced by monetary and fiscal policy.

ECON. 12
Inquiry Into Modern Economic Society II 3 credits

This course uses the inquiry approach. It will center on the salient characteristics of the modern American economy. Emphasis will be on explaining and evaluating the operations of the price system as it regulates production, distribution and consumption, and as it is in turn modified and influenced by private groups and government.

ECON. 13
Introduction to Problems of Economics of the World 3 credits

This course will emphasize growth theory and the problems confronting developing nations today; the role of international exchange and trade among both developed and underdeveloped countries; and the choices of economic organization open to nations in solving the basic economic problems.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Econ. 11-12	Inquiry into Modern Economic Society	3	3
COGNATE	Bus. 1-2	Elementary Accounting I-II	3	3
GE AREA I	Nat. Sci./Quant.	Electives	3	3
GE AREA III	Communications	Elective		3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Course	3	
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	Econ. 13	Introduction to Economics of the World	3	
MAJOR	Economics	Required or Elective Economic Courses	3	3
COGNATE	Electives	Electives in Cognate Areas	3	3
GE AREA III	Elective	Elective		3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Economics	Required or Elective Economics Courses	6	6
COGNATE	Bus. 105-106	Business Statistics I-II	3	3
GE AREA I	Nat. Sci./Quant.	Elective		3
GE AREA III	CMPS 21	Introduction to Computer Science*	3	
GE AREA IV	Humanities	Elective	3	
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies	3	3
			18	15
		SENIOR		
MAJOR	Economics	Required or Elective Economics Courses	6	3
COGNATE	Electives	Electives	3	3
GE AREA IV	Humanities	Electives	3	6
GE FREE	Electives	Electives	3	3
			15	15

TOTAL: 127 credits

An asterisk indicates departmental recommendation. Additionally, the department recommends the Writing Center (English 7) and the Oral Communication Center (English 2) from the Communications Area during the first two years except for those students notified of Advanced Placement in these skills because of high school academic or extracurricular work. Also, the department recommends Math. 3-4 (Quantitative Methods) during freshman year to satisfy the Area I Natural Science and Quantitative Studies requirement.

ECON. 102
History of Economic Thought 3 credits
(Prerequisite: Economics 11-12) This course is a survey of the origins of economic thought. Particular stress is placed on the economic and socio-political factors of the time.

ECON. 115
Microeconomic Analysis 3 credits
(Prerequisite: Economics 12) This course centers on the analysis of production and cost theories. The topics studied are pure competition, monopoly, oligopoly, monopolistic competition, factor pricing, resource allocation, and income distribution.

ECON. 116
Macroeconomic Analysis 3 credits
(Prerequisite: Economics 11) This course centers on the study of national income accounting, price level fluctuations, problems of full employment, and the impact of monetary and fiscal policy on the income level and distribution.

ECON. 120
Money and Credit 3 credits
(Prerequisite: Economics 11) A survey of money, credit and prices and their effects on economic stability. Credit controls by the Federal Reserve System.

ECON. 121
Corporation Finance 3 credits
(Prerequisite: Economics 12) The financial structure and problems of business corporations. Promotion. Investment banking. The security markets. Expansion, failure, reorganizations and receiverships.

ECON. 122
Financial Administration 3 credits
(Prerequisite: Economics 11 and 12) The functions of various banking, monetary and financial institutions and their use by business.

ECON. 129
Organization and Management 3 credits
(Prerequisite: Business 8 or Economics 12) The major concepts of managerial action deal with planning, organizing, directing and controlling. Knowledge of these key aspects of the management process will provide the student with a framework for decision making.

ECON. 151
Labor Economics 3 credits
(Prerequisite: Economics 11 & 12) This course studies employment as a career and a source of income; the measurement of wages, earnings and labor costs; the economics of wage determination; the labor force, employment and unemployment; income and economic welfare.

ECON. 155
Government and Business 3 credits
(Prerequisite: Economics 11) This course analyzes the effectiveness of competition in the American economy; centering on the structure, conduct and performance of American industry and concentrating on public policies of enforcing, supplementing or replacing competition.

ECON. 159
Public Finance and Taxation 3 credits
(Prerequisite: Economics 11) This course studies government expenditures, budgets, intergovernmental fiscal relations, public debt, fiscal policy, and the principles of taxation.

ECON. 161
International Trade 3 credits
(Prerequisite: Economics 11 & 13) This course analyzes the economic theory of international trade; the effect of trade on national income; trade restrictions; short and long run capital movements; international financial instruments and institutions.

ECON. 165
Economics of Growth and Development 3 credits
(Prerequisite: Economics 11 & 13) This course will emphasize the factors and conditions that influence economic growth with particular emphasis on the development of low income countries as both an economic and non-economic process.

ECON. 169
Comparative Economic Systems 3 credits
(Prerequisite: Economics 11 & 13) This course is a survey of the utilization of economic resources, production of wealth, and distribution of income under different political-economic systems. Special emphasis is placed on the organization of economic activity under capitalism and under socialism.

ECON. 181
Seminar on Contemporary Economic Problems 3 credits
(Prerequisite: Economics 11, 12, and 13) The content varies. This course is geared to independent scholarship by the student.

ECON. 191 & 192
Guided Independent Study Variable credit
This is a tutorial program open to junior Honors students only. Content is determined by the mentor.

ECON. 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in economics. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department.

EDUCATION

DR. LENNON, *Chairman*
MR. CURTIS, *Director of Student Teaching*

The aims of the Department of Education are: 1. to develop in the individual those professional qualities required for successful teaching; 2. to offer professional training for certification as a secondary school teacher; 3. to meet requests for specific courses by teachers in service; 4. to aid in the professional development of teachers by presenting a well integrated program of graduate studies leading to the Master's Degree.

Students will be accepted for teacher education only with the approval of the Department of Education. In addition to favorable personal traits, the minimum scholarship requirements include an overall QPA of 2.00; QPA 2.50 in the teaching field and approval of the applicant's major subject department.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Teaching Major	Introductory Courses	3	3
GE AREA I	Nat. Sci./Quant.	Elective		3
GE AREA II	Psych. 23-25	Fundamentals of Psych.-Human Behavior*	3	3
GE AREA III	Communications	Electives	3	3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Elective	3	
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	Teaching Major	Required or Elective Courses	6	6
COGNATE	Educ. 21-22	Foundations of Education-Education Psych.	3	3
GE AREA I	Nat. Sci./Quant.	Electives	3	3
GE AREA II	Soc. 21-22	Basic Sociology-Social Problems*	3	3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Teaching Major	Required or Elective Courses	6	6
COGNATE	Educ. 103-104	Analysis for Teaching-Curriculum/Methods	4	4
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
			16	16
		SENIOR		
MAJOR	Teaching Major	Electives		6
COGNATE	Educ. 105	Student Teaching	8	
COGNATE	Educ. 107	Reading in the Secondary School	2	
GE AREA III	Communications	Elective		3
GE AREA V	Phil.-T/RS	Philosophy and/or Theology Electives	6	
GE FREE	Electives	Electives		6
			16	15

TOTAL: 127 credits

The above program is for Secondary Education students majoring in English or Modern Language. Department recommendations are indicated by an asterisk.

For Secondary Education majors in Mathematics or the Physical Sciences, GE AREA IV Humanities courses should be substituted for the Area I courses indicated above in first and second year. Also, one of the GE electives in senior year comes from the humanities area with the remaining course coming from the Free area.

For Secondary Education majors in Social Studies, the courses are essentially the same as above; however, the freshman year psychology courses are assigned to the Free Area, the sophomore year sociology courses are assigned as part of the Major, and two courses in the humanities area are taken in sophomore year. Additionally, it should be noted that both General Education elective courses in senior year are assigned to the humanities area for these students.

Elementary or Business Education majors follow a similar program but should consult the department for specific changes.

For all non-science education majors, the department recommends the four-course sequence in Natural Science to satisfy the Area I requirement.

EDUC. 21
Social Foundations of Education 3 credits
The characteristics of the public school system in the United States; the role of education in our current society and the relationship of schools to other social institutions.

PSYCH. 23
Fundamentals of Psychology 3 credits
An introduction to the science of psychology with emphasis on the nature of behavioral data, learning paradigms, and assumptions underlying the fundamental principles of development and motivational-emotional processes. Introduction to, and familiarization with, the basic sources in psychology including journals and handbooks.

EDUC. 22
Educational Psychology 3 credits
Stress is placed upon growth, development, individual differences, emotions, motivation, learning principles and measurement. (Prerequisite: Psychology 23).

EDUC. 103
Analysis for Teaching 3 credits
A study of the various aspects of learning and the use of knowledge gained in improving instruction. The pupil, pupil-teacher relationship, the community, atmosphere, the instructional process and classroom situations will be studied. (Prerequisite: Educ. 22).

EDUC. 103L
Junior Year Experience 1 credit
The instruments for analysis developed in Ed. 103 will be used to collect data in actual classroom situations. Students will be involved with working in a school with a cooperating teacher.

EDUC. 104
Curriculum, Methods and Self-evaluation 3 credits
This course is a practicum for planning courses of study, units and lesson plans, preparing materials and operating equipment. This will be followed by micro-teaching and practice in evaluating one's own teaching. Emphasis will be on methods and materials as they relate to his own subject field. (Prerequisite: Educ. 103).

EDUC. 104L
Junior Year Experience 1 credit
Students will continue working with a cooperating teacher. Emphasis will be on utilizing and understanding teacher strategies.

EDUC. 105
Observation and Student Teaching 8 credits
Observation and study of classroom teaching are combined with actual student teaching under expert supervision. Group conferences and personal interviews with the supervisors. Admission to student teaching is only by approval of the Department of Education.

EDUC. 106
Philosophy of Education 3 credits
An examination of representative modern systematic philosophies of education with a critical analysis of the answers that each system of philosophy provides to the important questions concerning the nature of knowledge, of value, of man and of society

EDUC. 107
Reading in the Secondary School 2 credits
This course is a study of the reading process with emphasis placed upon understandings and skills needed by secondary school students in their subject fields.

ENGINEERING

The University provides a pre-engineering program which introduces the student to the highly technical training necessary for all phases of the engineering profession. This is a two-year course which enables the student to transfer to an engineering school to complete his degree work.

Of special importance is the University of Scranton's association with the Cooperative Engineering Program at the University of Detroit. For the student who has completed the pre-engineering curriculum at the University of Scranton, the three-year cooperative program offers alternate semesters of formal instruction and work experience in industry.

In addition to the valuable experience gained from industry, many students have been able to pay the cost of their tuition from the remuneration received for their work. This amounts to a substantial equivalent scholarship grant.

Students are formally members of the Physics Department. Professor Plonsky serves as advisor to students in the Pre-Engineering Program.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN		
MAJOR	Phys. 11-12	Elements of Physics I-II	4	4
COGNATE	CMPS 20	Computer Science 1A	3	
COGNATE	Math. 14-21	Analysis I-II	4	4
GE AREA III	Communications	Elective	3	
GE AREA IV	Humanities	Elective		3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			18	18
		FRESHMAN YEAR INTERSESSION		
MAJOR	Engr. 8	Engineering Graphics		3
		SOPHOMORE		
MAJOR	Engr. 44	Circuit Analysis		4
COGNATE	Phys. 21	Elements of Modern Physics	4	
COGNATE	Math. 22-101	Analysis III - Diff. Equations	4	4
COGNATE	Chem. 11-12	General and Analytical Chemistry	4	4
GE FREE	Elective	Electives	3	3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
			TOTAL: 71 credits	

ENGR. 8
Engineering Graphics 3 credits
The drawing of objects in orthographics, isometric, oblique and sectional views. Dimensioning, vector geometry, graphs, and graphical solution of engineering problems. One hour lecture, four hours laboratory per week.

ENGR. 44
Circuit Analysis 4 credits
(Prerequisites: Physics 12 and Mathematics 22) Intermediate course treating Kirchhoff's Laws, resistance networks, steady state and transient conditions in RC, RL and RLC networks. Thevein's and Norton's theorems and their equivalent circuits. Three hours lecture and two hours laboratory per week.

ENGLISH

DR. PASSON, *Chairman*

The department provides instruction in literature and communication for all students in the College. Literature courses may be chosen for the humanities area (IV) or as cognate courses for other humanities majors. In the English major program of 36 credits, 21 are specified below; the student selects the remaining 15 hours as the "specific difference" which individualizes his major program, depending on the student's vocational interest — graduate studies in English, law school, journalism, business. The department also offers a 5-year AB-MA program.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Engl. 11-12	English Inquiry I-II	3	3
COGNATE	Electives	Cognate Inquiry or Foreign Language	3	3
GE AREA I	Nat. Sci./Quant.	Elective		3
GE AREA II	Social/Behavior	Elective		3
GE AREA III	Communications	Elective	3	
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Elective	3	
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	Engl. 101-102	British Literature	3	3
COGNATE	Electives	Foreign Language or other Cognate	3	3
GE AREA I	Nat. Sci./Quant.	Electives	3	3
GE AREA III	Communications	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
PHYS EDUC	Ph Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Engl. 103-104-105	Required or Elective Courses	6	6
COGNATE	Hist. 140-141	History of England or other Cognates	3	3
GE AREA II	Social/Behavior	Electives	3	6
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies	3	3
			15	18
		SENIOR		
MAJOR	English	Elective Courses	6	6
COGNATE	Electives	Foreign Literature or other Cognates	3	3
GE AREA IV	Humanities	Electives	3	3
GE FREE	Electives	Electives	3	3
			15	15

TOTAL: 127 credits

The department recommends The Nature of Nature (N.S. 1) as the Interdisciplinary Elective in first year to be followed by the other three courses of the Natural Science Parsegian sequence from Area I.

ENGL. 2
Oral Communication Center 3 credits
A study and application of the skills which are necessary for the attainment of proficiency in oral communication. The areas covered include both formal and informal speech activities. Laboratory techniques for individualized instruction will be stressed; tapes and other modern media will be used. Successful completion of English 2 fulfills the oral communication skills requirement of the college.

ENGL. 4
Writing Clinic 3 credits
The clinic is a special adaptation of the writing center, designed for the University's Academic Development Program. This course emphasizes the developmental aspects of writing. The laboratory approach will be the primary method of instruction, with individual attention provided both by the instructor and by lab assistants. Successful completion of English 4 fulfills the written communication skills requirement of the college.

ENGL. 7
Writing Center 3 credits
The writing center, designed both for students with writing deficiencies and students desiring to refine their writing abilities, features laboratory techniques. The laboratory approach allows individual attention by instructor and lab assistants in the exploration of writing in a range of areas; it is augmented by the use of the resources of modern media as writing stimuli. Successful completion of English 7 fulfills the written communication skills requirement of the college.

ENGL. 9
Communication in the New Media 3 credits
A study of the principles and techniques of communication employed in television, films, radio, newspapers, and magazines. Emphasis will be on supervised exercises in the uses of these media.

ENGL. 11
English Inquiry I 3 credits
An exploration of the nature of literary criticism and scholarship. The approach is inductive; the emphasis is on understanding the purposes of the study of literature and on mastering some techniques of that study.

ENGL. 12
English Inquiry II 3 credits
An extension and continuation of Inquiry 1. The techniques learned will be applied to a

Dr. Richard Passon, Chairman, Department of English

specific problem or set of problems, the nature of which will be formulated by the class and instructor.

ENGL. 20
Introduction to Literature 3 credits
A study of the major literary types: prose, fiction, poetry, and drama. Relevant examples will be analyzed to develop critical techniques and a critical vocabulary. Writing assignments will be critical in nature.

ENGL. 21
English Literature, 450-1800 3 credits
A study of English Literature from Beowulf to the beginnings of the Romantic Movement. The emphasis is textual rather than historical. All writing assignments will be critical in nature.

ENGL. 22
English Literature, 1800 to the Present Day 3 credits
A study of English Literature from Romantic Period to the middle of the Twentieth century. The emphasis again is textual and critical. Writing assignments will be critical in nature.

ENGL. 23
American Literature through the Romantic Period 3 credits
A study of major figures in America's literature from the colonial period through the age of transcendentalism, including such figures as Edward Taylor, Jonathan Edwards, Hawthorne, Thoreau, Emerson, Melville, and Whitman.

ENGL. 24
American Literature to the Present Day 3 credits
The study of major figures in America's literature from the beginnings of realism to today's literature of revolt. Included will be such disparate authors as Twain, Dickinson, Dreiser, Lewis, Hemingway, Fitzgerald, Ginsberg, and LeRoi Jones.

ENGL. 25
Introduction to Fiction 3 credits
An exploration of the nature of prose fiction, its elements and techniques. The emphasis is critical rather than historical. The range of works and the specific selections may vary with the individual instructor.

ENGL. 26
Introduction to Poetry 3 credits
An exploration of the nature of poetry, its value, aims, and techniques. The emphasis will be critical rather than historical. The range of poems and the specific selections will be the choice of the individual instructor.

ENGL. 27
Introduction to Drama 3 credits
An exploration of the nature of drama, its types, techniques, and conventions. The emphasis will be critical rather than historical. The range of plays and the specific selections may vary with the individual instructor.

ENGL. 101
British Literature: Medieval and Renaissance Periods 3 credits
A detailed study of representative works and authors from *Beowulf* to the Restoration. Though the emphasis will be on an intensive study of major texts, some consideration will be given to minor writers and their times. Assignments will emphasize literary research and practical criticism.

ENGL. 102
British Literature: The Restoration and Eighteenth Century 3 credits
Study in depth of the major works of such authors as Dryden, Pope, Swift, Boswell, and Johnson, among others. Due attention will be given to critical analysis, literary research, and historical, social, and political background.

ENGL. 103
British Literature: Romantic and Victorian Periods 3 credits
A study of major pieces of literature of nineteenth-century England: poetry, novels, and non-fictional prose. The emphasis is threefold: critical analysis; literary history; social, intellectual and political background.

ENGL. 104
American Literature to 1900 3 credits
An in-depth study of a select group of major American authors from Edward Taylor through Mark Twain. Consideration will be given to the historical context and to critical writing.

ENGL. 105
Twentieth Century British and American Literature 3 credits
Study of selected major British and American poets, playwrights, and novelists of the present century. Such authors as Yeats, Eliot, Auden, Frost, Shaw, Pinter, O'Neill, Miller, Joyce, Woolf, Faulkner, and Hemingway will be considered. Literary research and criticism will be included.

ENGL. 108
Religion and Literature 3 credits
A study of religious attitudes to man in the twentieth century as revealed through selected modern literary works in various genres. In the attempt to read literature for the revelation of religious ideas focused on the nature of man, the course will avoid the technical extremes of both doctrinal theology and literary criticism.

ENGL. 112
Black Literature 3 credits
This is an introductory survey course in Afro-American literature, featuring an in-depth examination of the works of major Black authors from the colonial American period to the present.

ENGL. 113
Logical and Rhetorical Analysis 3 credits
A study of the principles of logic and persuasion, an analysis of fallacies, the principles of structure in written and oral composition. Practice in briefs and abstracts, with an emphasis on exactness and clearness.

ENGL. 114
Argumentation and Debate 3 credits
A study of the techniques of argumentation and persuasion. Major areas of concentration are in research, case construction, and analysis.

ENGL. 116
Broadcasting 3 credits
A study of those forces which produce any broadcast system: physical, historical, economic and social. The course also provides instruction in the requirements to be met for the FCC Third Class Radio Telephone Operator License.

ENGL. 117
Broadcast Programming
A study of broadcast formats, program assembly, and creative programming. Opportunity is provided for the student to construct programs suitable for broadcasting within this framework.

ENGL. 121
Scandinavian and Russian Drama 3 credits
Study (in translation) of representative plays of Norwegian, Swedish, and Russian playwrights. Among the playwrights to be considered are:
1) (Scandinavian) Ibsen, Bjornson, Strindberg, and Lagerkvist;
2) (Russian) Chekhov, Ostrovsky, Gorky, Mayakovsky, and Simonov.

ENGL. 122
A history of the Russian novel (in translation) from Pushkin and Gogol, through Turgenev, Dostoievski and Tolstoi, to Sholokov, Pasternak and Solzhenitsyn.

ENGL. 123
Workshop in Writing 3 credits
Study and analysis of various styles of major writers, with exercises based on such analyses. The emphasis is on writing, and the course will combine lecture and laboratory methods.

ENGL. 125
Teaching Composition in the Secondary School 3 credits
This is primarily a methods course which presents theoretical, practical, and innovative approaches to teaching writing. An important aspect of the course is the involvement of the student in laboratory activities; each class member experiences a "mini-teaching" responsibility by functioning as an assistant in the freshman writing laboratory. Both cognitive and affective approaches to composition are considered.

ENGL. 127
Teaching Modern Grammars 3 credits
This course is designed to provide an understanding of the English language and its grammar, based upon recent linguistic analysis of the language, and to assist the future teacher in his understanding of transformational/generative grammar and its place in the curriculum. Techniques for teaching these new grammars, and laboratory teaching experience in the freshman writing clinic will be presented.

ENGL. 131 & 132
Masterworks of Western Civilization 6 credits
Study of masterpieces of literature from the Hebrew Old Testament and classic Greek to the modern European, to illustrate the development of Western civilization.

ENGL. 133
Practical Criticism 3 credits
A study of the principles of literary criticism and their application to selected works of literature.

ENGL. 134
The English Language 3 credits
A study of the development of the English language to the present day, with an introduction to the science of linguistics.

ENGL. 135
Chaucer and the Middle Ages 3 credits
A study of the works of Geoffrey Chaucer, with particular emphasis on his Canterbury Tales; Piers Plowman; the Medieval drama; and Malory.

ENGL. 136
Shakespeare (Tragedies) 3 credits
Critical and appreciative study of five major tragedies and five of the principal chronicle plays.

ENGL. 137
Shakespeare (Comedies) 3 credits
Critical and appreciative study of the major comedies and of the comic sequences in the chronicle plays.

ENGL. 138
Literature of the 16th Century 3 credits
A study of the major literary figures of the 16th Century. Wyatt, Surrey, Sidney, Spenser, and the Tudor playwrights.

ENGL. 139
17th Century Poetry:
The Metaphysicals and Milton 3 credits
A study of the works of the metaphysical poets, with emphasis on John Donne; and of the major poems of Milton.

ENGL. 140
The Augustan Age 3 credits
A survey of the literature of England from 1660 to 1750: Dryden, Pope, Swift, Addison, and Steele.

ENGL. 141
Johnson and His Circle 3 credits
A study of the literature of the second half of the 18th Century. Johnson, Boswell, the pre-Romantics, and the beginnings of the English novel.

ENGL. 142
The Romantic Period 3 credits
A study of the poetry of Wordsworth, Coleridge, Byron, Shelley, and Keats.

ENGL. 143
Victorian Prose and Poetry 3 credits
Critical and appreciative study of the outstanding authors of the Victorian period.

ENGL. 144
The English Novel:
Richardson to Hardy 3 credits
A study of the development of the English novel from its 18th Century beginnings to Thomas Hardy.

ENGL. 145
American Literature to 1900 3 credits
A survey of the work of major American authors from the Colonial period through the 19th Century.

ENGL. 146
Modern British and
American Poetry 3 credits
Study of major British and American poets: Frost, Williams, Stevens, Marianne Moore, Eliot, Dylan Thomas, Yeats.

ENGL. 147
Modern British and
American Drama 3 credits
A study of British drama from the time of the Irish dramatic revival, and of American drama from O'Neill to the present.

ENGL. 148
Modern British and American Novel 3 credits
A study of British and American fiction from 1900 to the present.

ENGL. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to Sophomore and Junior Honors students only. Content determined by mentor. Maximum enrollment in any tutorial—3 students.

ENGL. 195 & 196
Senior Honors Tutorial Variable credit
A tutorial program open only to Senior Honors students majoring in English. The course involves the preparation of a special project which is reported in writing and defended orally before a Departmental committee.

FOREIGN LANGUAGES AND FINE ARTS

MR. CIMINI, *Chairman*

Courses in Modern Languages undertake: 1. to give the student the requisite skills in reading, writing, and speaking foreign languages; 2. to train the student in logic and precision of thought and expression through a comparative study of his own and a foreign language; 3. to develop the student's aesthetic appreciation and critical ability through reading of the best foreign authors; 4. to give an insight into the evolution of European and Latin American thought, history and culture as reflected in literature.

A major in a modern foreign language requires the completion of the intermediate course (6 credits) or its equivalent, the advanced language requirement (101-102, 6 credits), plus 24 credits in upper-division courses. It is recommended that modern language majors take at least 12 credits in a second foreign or classical language. The placement of students at a particular foreign language level is the responsibility of the department.

Potential teacher candidates of a modern language are required to take the Modern Language Proficiency Test in their junior or senior year. A candidate failing such a requirement will be eligible for graduation since he has completed all course work, but will not receive the endorsement of the Modern Language Department unless he has accomplished remedial work to its satisfaction.

Modern language students are invited to take advantage of foreign language courses at Marywood College offered in cooperation with the University of Scranton. Students will make application through the chairman of the Modern Language Department at the University.

FRENCH

FRENCH 1 & 2
Elementary French 6 credits
A course designed to impart a good basic foundation in comprehending, speaking, reading, and writing of the French language. Designed primarily for students with no or insufficient background in the French language. Meets four hours a week or equivalent. Prerequisite: none.

FRENCH 23 & 24
Intermediate French 6 credits
A course designed to give greater scope and depth to the student's knowledge of the grammar and style of the French language, with readings of original works selected from French literature. Meets four hours a week or equivalent. Prerequisites: French 1 & 2, or equivalent.

FRENCH 101 & 102
Advanced French Composition and Conversation 6 credits
An intensive course in French composition and conversation with emphasis on detailed study of advanced grammatical and stylistic usage of the French language. Meets three hours a week, or equivalent, and one hour weekly independent practice in the language laboratory. Prerequisites: French 23 & 24, or equivalent.

FRENCH 103 & 104
French Cultural Heritage 6 credits
A study of French society, one of the most influential in Western Civilization, from the Roman Conquest of Gaul to the present. Emphasis will be placed on the impact which the French way of life and culture have had on American society. Presentation will be entirely in English. No pre-requisite of French required.

FRENCH 111 & 112
Survey of French Literature 6 credits
A survey of French literature from the Chanson de Roland to the contemporary period. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 113 & 114
Survey of French Culture and Civilization 6 credits
An advanced survey of the political, military, philosophical, artistic, literary, scientific, and cultural progress of French society from the Roman Occupation until today. Conferences and discussions exclusively in French, oral and written reports. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

MODERN LANGUAGE CONCENTRATION

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Mod. Lang.	Intermediate Language	3	3
COGNATE	Lang. 1-2	Second Foreign or Classical Language	3	3
GE AREA I	Nat. Sci./Quant.	Electives	3	3
GE AREA III	Communications	Elective		3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Elective	3	
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	Mod. Lang. 101-102	Advanced Composition and Conversation	3	3
COGNATE	Lang. 23-24	Second Foreign or Classical Language	3	3
COGNATE	Engl. 133-134	Practical Criticism — English Language	3	3
GE AREA II	Social/Behavior	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct		3
GE AREA V	T/RS	Theology/Religious Studies Elective	3	
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Mod. Lang.	Advanced Language Elective	6	6
COGNATE	Elective	Elective	3	
GE AREA II	Social/Behavior	Electives	3	3
GE AREA III	Communications	Electives	3	3
GE AREA IV	Humanities	Elective		3
GE AREA V	Phil.-T/RS	Philosophy or Religious Studies Elective		3
			15	18
		SENIOR		
MAJOR	Mod. Lang.	Advanced Language Elective	6	6
COGNATE	Elective	Elective	3	
GE AREA I	Nat. Sci./Quant.	Elective	3	
GE AREA IV	Humanities	Elective		3
GE AREA V	Phil.-T/RS	Philosophy or Religious Studies Elective		3
GE FREE	Electives	Electives	3	3
			15	15

TOTAL: 127 credits

For modern language majors seeking certification in secondary education, the departmental chairman should be consulted on a program.
In Area III, English 7 is recommended during first or second year.
In Area IV, Hist. 114, 115, 116, 119 or 161-62 are recommended.
As a Cognate, Hist. 119 is also recommended for those not seeking certification in secondary education.
In Area V, Phil. 141 and 127 are recommended.

CLASSICAL LANGUAGES CONCENTRATION

The Bachelor of Arts degree program in Classical Languages gives the student a solid foundation in Latin and Greek to engender an appreciation of the liberal aspects of Classical Studies.

	Dept. & No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Latin	Elementary, Intermediate or Advanced	3	3
COGNATE	Gk/MFL	Greek or Modern Foreign Language	3	3
GE AREA III	Communications	Electives	3	3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			13	16
		SOPHOMORE		
MAJOR	Latin	Intermediate or Advanced Latin	3	3
COGNATE	Gk/MFL	Greek or Modern Foreign Language	3	3
GE AREA II	Social/Behavior	Electives	3	3
GE AREA III	Communications	Elective	3	
GE AREA IV	Humanities	Electives	3	3
GE AREA V	T/RS	Elective		3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Latin	Advanced Latin Electives	6	6
COGNATE	Electives	Greek, English or Modern Foreign Lan.	3	3
GE AREA I	Nat. Sci./Quant.	Electives	3	3
GE AREA II	Social/Behavior	Electives	3	3
GE FREE	Electives	Electives	3	3
			18	18
		SENIOR		
MAJOR	Latin	Electives	6	6
COGNATE	Gk/MFL	Greek, English or Modern Foreign Lan.	3	3
GE AREA I	Nat. Sci./Quant.	Elective	3	
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies		6
			15	15

TOTAL: 127 credits

The department recommends that in freshman year, students take Oral Communication Center (English 2) and Writing Center (English 7) except for those students with extensive high school experience in speech or writing. Additionally, Art 101 is recommended as a second year Communications Elective.

FRENCH 121
French Literature of the Middle Ages 3 credits
A study of Old French literature from the Chansons de geste to the advent of the Renaissance. Meets three hours a week, or equivalent, and one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 131
French Literature of the XVIth Century 3 credits
A study of French prose and poetry, with emphasis given to such writers as Rabelais, Marot, Ronsard, Dubellay. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 141
French Literature of the XVIIth Century 3 credits
A survey of French literary and philosophical expression from 1610 to 1715. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 151
French Literature of the XVIIIth Century 3 credits
The course of the French Enlightenment from the libertines to the Revolution 1789. Meets three hours a week, or equivalent and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 161
The French Novel of the XIXth Century 3 credits
The emergence of the novel as a literary genre in 19th Century France. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 162
French Poetry of the XIXth Century 3 credits
A study of representative French poets from Romanticism to Naturalism. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 171
The French Novel of the XXth Century 3 credits
Survey and study of important novelists from the Dreyfus Affair until today. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 172
French Poetry of the XXth Century 3 credits
An intensive study of contemporary French poetry from the beginning of our century until today. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 173
Modern French Theater 3 credits
A study of selected plays and trends of the French theater from Antoine's Theatre libre until the present day. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 181
History of the French Language 3 credits
A methodical historical study of the development of the French language and its relation with other Indo-European languages, particularly with Latin, Italian, Spanish, German, and English. Short introduction to general comparative linguistics. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: French 101 & 102, or equivalent.

FRENCH 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor. Maximum enrollment three students. Prerequisites: French 23 & 24, or equivalent, but with preference to French 101 & 102, or equivalent.

FRENCH 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in French. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department. Content determined by mentor.

GERMAN

GERMAN 1 & 2
Elementary German 6 credits
A complete course in the fundamentals of the German language. Emphasis on reading of graded texts, with written, oral and aural exercises. Designed primarily for students with no or insufficient background in the German language. Meets four hours a week, or equivalent. Prerequisite: none.

GERMAN 23 & 24
Intermediate German 6 credits
Reading from modern authors of moderate difficulty. Oral and written exercises. Systematic review of German grammar. Meets four hours a week, or equivalent. Prerequisite: German 1 & 2, or equivalent.

GERMAN 101 & 102
Advanced German Conversation and Composition 6 credits
Selected texts in prose and poetry. Advanced practice in conversation and composition. Survey of German grammar. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisite: German 23 & 24, or equivalent.

GERMAN 103-104
The German Heritage 6 credits
A comparative survey of German culture and civilization presented in English lectures, discussions and readings for the non-specialist with the purpose of stimulating interest and laying the foundation for further study. No pre-requisite or knowledge of German required.

GERMAN 111 & 112
Survey of German Literature 6 credits
A survey of German literature from the eleventh century to the contemporary period, with special emphasis on the main intellectual currents as well as the social and political developments. Collateral reading of representative works by important authors. Meets three hours a week or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisite: German 101 & 102, or equivalent.

GERMAN 113 & 114
History of German Civilization 6 credits
Selected readings of representative essays by major philosophers, scientists, historians and related self-analysis by major writers. Discussions, oral and written reports. Meets three hours a week or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisite: German 101 & 102, or equivalent.

GERMAN 151
The Age of Frederick the Great 3 credits
The study of German literature in the Age of Enlightenment. Reading and interpretation of representative poets and critics, e.g., Gottsched, Lessing, Herder, Klopstock. Meets three hours a week or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisite: German 101 & 102, or equivalent.

GERMAN 152
Goethe and the Weimar Circle 3 credits
A study of the "Sturm and Drang" and the classical reaction. Reading and interpretation of Goethe's Faust (Pt. I and the selections of Pt. II), Iphigenie, Schiller's Wilhelm Tell, etc. Oral and written reports. Meets three hours a week or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisite: German 101 & 102, or equivalent.

GERMAN 161
XIX Century Literature 3 credits
A study of the principal trends in 19th Century German literature. Selected readings in prose and poetry. Written reports on selected novels and important critical works. Meets three hours a week or equivalent and a one hour weekly independent practice in the language laboratory. Prerequisite: German 101 & 102, or equivalent.

GERMAN 171
XX Century Literature 3 credits
A study of the principal trends in contemporary German literature. Selected readings in prose and poetry. Written reports on selected novels and important critical works. Meets three hours a week or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisite: German 101 & 102, or equivalent.

GERMAN 181-182
History of the German Language 6 credits
Historical study of German language and its relations with other Indo-European Languages, particularly with English. An introduction to comparative linguistics. Meets three hours a week or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisite: German 101 & 102, or equivalent.

GERMAN 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor.

GERMAN 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in German. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department.

SPANISH

SPANISH 1 & 2
Elementary Spanish 6 credits
Fundamentals of grammar, drill in pronunciation, conversation, easy readings and written exercises. Designed primarily for students with no or insufficient background in the Spanish language. Meets four hours a week, or equivalent. Prerequisite: none.

SPANISH 13
Conversational Spanish 3 credits
A course especially designed for students with no previous knowledge of Spanish. Continuous drills and exercises on pronunciation and practical conversation. Meets four hours per week or equivalent.

SPANISH 23 & 24
Intermediate Spanish 6 credits
Grammatical review, written and oral composition. Selected cultural readings of intermediate difficulty. Meets four hours a week, or equivalent. Prerequisites: Spanish 1 & 2, or equivalent.

SPANISH 25-26
Commercial Spanish 6 credits
A course especially recommended for business majors. A study of vocabulary and forms used in commerce. Practice in writing of letters and other business forms. Reading of Spanish models as a basis for free composition. Oral practice and selected readings on national economy of Hispanic countries. Prerequisite: Spanish 1 & 2, or equivalent.

SPANISH 101 & 102
Advanced Composition and Conversation 6 credits
A thorough study of Spanish grammar, composition, oral and written, with aim of developing ability to write clear and fluent Spanish. Practice in oral composition. Meets three hours a week or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: Spanish 23 & 24, or equivalent.

SPANISH 103-104
The Spanish Heritage 6 credits
A survey of Spanish culture and civilization from pre-Roman Spain to present-day society. Lectures, discussions, and readings in English, supplemented by films, slides, records. No previous knowledge of Spanish required. Each semester can be taken independently.

SPANISH 106-107
Latin American Heritage 6 credits
A course designed to offer wider knowledge and develop greater understanding of the culture and civilization of Latin America, emphasizing the cultural, political, and economical relations between the U. S. and Ibero-America. Lectures, discussions, and appropriate selected readings in English. No prerequisite or knowledge of Spanish required.

SPANISH 111 & 112
Survey of Spanish Civilization 6 credits
A survey of the political, artistic, literary and scientific progress of Spain, with readings of each period. Meets three hours a week or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: Spanish 101 & 102, or equivalent.

SPANISH 113 & 114
Spanish-American Culture and Civilization 6 credits
The social, artistic, literary and political development of Spanish America, with special emphasis on its unifying features: Language, Religion and Historical background. Meets three hours a week or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: Spanish 101 & 102, or equivalent.

SPANISH 115 & 116
History of Spanish Literature 6 credits
Study of Spanish literature from Cantar de Mio Cid to XX century, with emphasis on main literary currents in each century. Lectures in Spanish. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: Spanish 101 & 102, or equivalent.

SPANISH 131 & 132
The Golden Age 6 credits
The development of the novel, with the culmination of all forms in Cervantes; and of the drama, reaching its perfection in De Vega and Calderon. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: Spanish 101 & 102, or equivalent.

SPANISH 161 & 162
The Modern Spanish Novel 6 credits
The Short Story and the Novel in Spain in the late 19th and early 20th centuries. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Readings of most important authors and works. Lectures and discussions in Spanish. Prerequisites: Spanish 101 & 102, or equivalent.

SPANISH 163 & 164
The Latin American Novel 6 credits
An examination of the esthetic, cultural and social aspects of prose fiction in Latin America over the past two hundred years. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: 101 & 102, or equivalent.

SPANISH 165 & 166
The Generation of 1898 6 credits
Thorough examination of the movement, its political, historical, and social background; Ganivet, Unamuno, Azorin, etc. Meets three hours a week, or equivalent, and a one hour weekly independent practice in the language laboratory. Prerequisites: Spanish 101 & 102, or equivalent.

SPANISH 191 & 102
Guided Independent Study Variable credit
A tutorial program open to sophomore and junior Honors students only. Content determined by mentor.

SPANISH 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in Spanish. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department. Content determined by mentor.

RUSSIAN
(offered at Marywood College)

RUSSIAN 1 & 2
Elementary Russian 6 credits
Principles of the grammar of Great Russian. Aim: a speaking and written knowledge of standard Russian by reading, conversation, and written and oral exercises.

RUSSIAN 23 & 24
Intermediate Russian 6 credits
(Prerequisite: Russian 1-2 or equivalent) Further vocabulary building, review grammar, oral and written exercises and composition, enlarged reading ability based on graded texts and selected modern prose of intermediate difficulty.

ITALIAN
(offered at Marywood College)

ITALIAN 1 & 2
Elementary Italian 6 credits
A course in Italian for beginners. Principles of Italian grammar, drill in pronunciation; conversation and easy readings.

ITALIAN 23 & 24
Intermediate Italian 6 credits
(Prerequisite: Italian 1 & 2, or equivalent) Selected modern readings of intermediate difficulty. Written and oral composition.

GREEK

GREEK 1 & 2
Elementary Greek 6 credits
An intensive course in the fundamentals of Classical Greek grammar.

GREEK 23 & 24
Intermediate Greek 6 credits
Review of fundamentals. Readings from Xenophon, Euripides and the New Testament.

GREEK 101
Homer 3 credits
Selected readings from the Iliad and the Odyssey. An appreciation of the diction, thought and beauty of Homer.

GREEK 102
Thucydides 3 credits
Evaluation of fifth century Athens and of Thucydides as philosopher and historian. Readings from the History of the Peloponnesian War.

GREEK 105
Plato 3 credits
Reading of the Apology. A philosophical, historical and literary analysis of Plato and Socrates. Supplementary reading in the Crito and Phaedo.

GREEK 106
Euripides 3 credits
Reading and analysis of the Medea with an evaluation of the art and thought of Euripides.

GREEK 107
Sophocles 3 credits
Evaluation of Sophocles as a poet, dramatist and thinker through a study of the Oedipus Tyrannus.

GREEK 108
Demosthenes 3 credits
An analysis of the De Corona as a model of rhetoric. Consideration of the rhetorical norms established by Aristotle.

GREEK 109 (110)
Readings in Greek Literature 3-6 credits
Selections from Greek writers to suit the student's special interest.

GREEK 117
Greek Literature in Translation 3 credits
A survey in English of ancient Greek literature from the beginning to Hellenistic times.

GREEK 119
Ancient History: Greece 3 credits
The political, constitutional and cultural history of Greece from the earliest times to the Roman conquest.

GREEK 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor.

GREEK 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in Greek. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department.

LATIN

LATIN 1 & 2
Elementary Latin 6 credits
An intensive course in the fundamentals of Latin. Reading and composition.

LATIN 23 & 24
Intermediate Latin 6 credits
Review of fundamentals. Reading of selections from Caesar, Cicero and Virgil.

LATIN 101
Horace and Juvenal 3 credits
A study of Roman satire revealing the life, manners and thought of the times.

LATIN 102
Cicero: Rhetoric 3 credits
The Pro Lege Manilia and Pro Milone are studied from the standpoint of rhetorical analysis.

LATIN 103
Cicero and Lucretius 3 credits
Selections from the Tusculan Disputations and the De Rerum Natura illustrate contrasting developments in Roman thinking. The course includes a brief survey of ancient philosophy.

LATIN 104
Christian Latin Literature 3 credits
Selections from Christian Latin writers with concentration on the Confessions of St. Augustine. Lectures on the development of Christian Latin literature.

LATIN 105
Plautus and Terence 3 credits
Reading of the Duo Captivi and Phormio Lectures on the development of Roman comedy.

LATIN 106
Tacitus 3 credits
The Agricola and Germania are read. A study of style and content in Tacitus. Reference to the Annals and Histories.

LATIN 107
Livy and Virgil 3 credits
Selections from Livy I and XXI, and from Books VII-XII of Virgil's Aeneid.

LATIN 108
Horace and Catullus 3 credits
Lyric poetry illustrated by the Odes of Horace and selected poems of Catullus.

LATIN 109 (110)
Readings in Latin Literature 3-6 credits
Selections from Latin writers to suit the student's special interest.

LATIN 111 & 112
Medieval Latin 6 credits
Introduction to medieval Latin. Readings in medieval prose and poetry from the ninth to the fifteenth centuries.

LATIN 115 & 116
Latin Composition 6 credits
Exercises in the writing of correct Latin prose. The course is intended for Classics majors and for prospective teachers of Latin.

LATIN 118
Latin Literature in Translation 3 credits
A survey in English of ancient Latin literature from the beginning to the fourth century.

LATIN 120
Ancient History: Rome 3 credits
The political, constitutional and cultural history of Rome from the earliest times to the end of Western Empire.

LATIN 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor.

LATIN 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in Latin. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department.

ART APPRECIATION

ART 101 & 102
Appreciation of the Visual Arts 6 credits
The interpretation, appreciation and aesthetic norms of art, architecture and sculpture. Aegean civilization. Greece and Rome. Early Christian and Byzantine art. Romanesque and Gothic classics will be discussed during the first semester. The spring term includes the Renaissance painting, sculpture and architecture; Baroque period painting in the Low Countries and England. French art form classicism to post-impressionism. Modern trends.

ART 103 & 104
Music Appreciation 6 credits
Introduction to elements and forms. Analysis and interpretation of respected masterpieces to encourage perceptive listening habits. The first semester will preview music development to Bach, while the second semester will treat compositions from Bach to the present including America. No previous formal training is required.

ART 107 & 108
The History and Art of the Cinema 6 credits
A study of the historical development and techniques of motion pictures as a major form in our modern culture. The first semester embraces the history, grammar and poetics of Film, while the Spring semester is devoted to Films' rhetoric, aesthetics and criticism.

ART 109 & 110
History of American Art 6 credits
A survey of architecture, sculpture, and painting in America from the 17th century to the present day.

ART 119
Guided Independent Study in Art and Music 3 credits
Courses are intended to meet specific needs. Content and methodology vary.

HISTORY

MR. SCULLY, *Chairman*

The department aims: 1. to train the student in solid historical methodology; 2. to present history as the study of interdependent human activities and concrete events which have social significance; 3. to engender an intelligent and critically sympathetic understanding of various civilizations and cultures.

The strength of the department is indicated by the recent grant from the National Endowment for the Humanities to facilitate courses on the ethnic and racial minorities of Northeastern Pennsylvania.

	Dept. and No.	Descriptive Title of Course	Credits FALL	SPRING
		FRESHMAN		
MAJOR	Hist. 11-12	History Inquiry I-II	3	3
COGNATE	Elective	Cognate Inquiry Sequence or Language	3	3
GE AREA I	Nat. Sci./Quant.	Electives	3	3
GE AREA III	Communications	Elective		3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Elective	3	
PHYS EDUC	Ph. Ed. 23-24	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	History	Required or Elective Courses	3	3
COGNATE	Electives	Electives	3	3
GE AREA I	Nat. Sci./Quant.	Elective	3	
GE AREA III	Communications	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct		3
GE AREA V	T/RS	Theology/Religious Studies Elective	3	
GE FREE	Elective	Elective		3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	History	Electives	6	6
COGNATE	Electives	Electives	3	3
GE AREA II	Social/Behavior	Electives	6	3
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies	3	3
			18	15
		SENIOR		
MAJOR	History	Electives	6	6
COGNATE	Electives	Electives	3	3
GE AREA II	Social/Behavior	Elective	3	
GE AREA IV	Humanities	Electives	3	3
GE FREE	Elective			3
			15	15

TOTAL: 127 credits

The department recommends the four-course Parsegian sequence in the Natural Sciences for Area I General Education; this can be completed through the use of the FREE AREA in second semester of sophomore year.

Students intending to pursue a career in elementary or secondary education will take education as their cognate; for purposes of certification an adjustment may be made in the major program as long as the major includes at least 30 hours.

HIST. 1 & 2
History of the United States 6 credits
(History 1 is prerequisite of History 2.) The United States from the time of its European beginnings to the present, with special emphasis on the history of Pennsylvania; colonial origins to the end of the Civil War; reconstruction to the present.

HIST. 3 & 4
Europe, 1500 to the Present 6 credits
European history with concentration upon the political aspects of European development. The rise of national monarchies; political developments; industrialism; the new nationalism and liberalism.

HIST. 11-12
History Inquiry 6 credits
The course will focus on the meaning and method of history, introducing the undergraduate student to the operative side of history, its nature and its possibilities. It will consider fewer events quantitatively than the traditional survey course so that emphasis can be given to the following topics· a definition of history, reasons for studying history, philosophies of history, historical method, types of historical writing and historiography.

HIST. 110 & 111
Medieval History 6 credits
(Prerequisite: History 3-4 or by special permission of instructor) A survey of medieval political and religious institutions. The origins and diffusion of Christianity; the contribution of imperial Rome; the emergence of political authority; the spread of learning under monastic influence; the role of the Papacy; the achievements of the Crusades. Decline of the Eastern Empire; the Holy Roman Empire; the Church in the period of Innocent III, the Renaissance of the twelfth and thirteenth centuries; the decline of medieval Europe before the secularization of thought in the field of politics, economics and religion.

HIST. 112 & 113
Renaissance and Reformation 6 credits
(Prerequisite: History 3 & 4) An intensive study of Europe from the fourteenth to the middle of the seventeenth century Humanism; the bourgeoise; breakdown of medieval unity; Protestant Revolution; Catholic Reformation; religious wars; Peace of Westphalia.

HIST. 114
French Revolution to 1815 3 credits
(Prerequisite: History 3 & 4) Historical antecedents; the philosophies; republicanism and the fall of the monarchy; Reign of Terror; the Directory; Napoleon; internal achievements; significance of the Spanish and Russian Campaigns; and War of Liberation.

HIST. 115
Europe 1815-1875 3 credits
(Prerequisite: History 3 & 4) The Congress of Vienna and the European restoration; Industrialism, Liberalism, Socialism, and Nationalism; the revolutions of the 1840's; the unification of Italy and the German Empire; Russia and the Lesser States of Europe; The Third French Republic.

HIST. 116
Europe 1875-1914 3 credits
(Prerequisite: History 3 & 4) The domestic problems confronting France, Italy, Germany, Central and Eastern Europe, and Russia. Competition for colonies and markets; the growth of alliances; World War I and the Treaty of Versailles. The Russian Revolution and Communism.

HIST. 117 & 118
Europe in Its World Setting Since 1914 6 credits
(Prerequisite: History 3 & 4) World War I; Treaty of Versailles; Russia becomes the U.S.S.R.; the European struggle for security; Italian Fascism; Rise of Nazi Germany; Asia between the two wars; World War II; loss of colonial empires in Africa and Asia; development of the Cold War; Marshall Plan and NATO.

HIST. 119
Special Topics in European History 3 credits
An analysis of selected topics in European internal history. Extensive reading and library work are required.

HIST. 120 & 121
American Diplomatic History 6 credits
(Prerequisite: History 1 & 2) The State Department and its relation to other policy-forming agencies of the federal government. Diplomatic activities prior to 1789; the Louisiana Purchase; War of 1812; the Monroe Doctrine; Manifest Destiny; Pan-Americanism, Cuba and the Caribbean; World War I; problems in the inter-bellum period; today's challenges and attempted solutions. United Nations Organization.

HIST. 122 & 123
American Constitutional and Legal History 6 credits
(Prerequisite: History 1 & 2) The juridical concepts of the colonial and revolutionary

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periods; backgrounds of the Federal Convention; the nature of the Constitution, its interpretation by Marshall and Taney. The constitutional problems occasioned by the Civil War; the new amendments; the role of the States in a Federalist system. Key cases will be analyzed in detail and set in their proper historical perspective

HIST. 124 & 125
American Political and Social Thought 6 credits
(Prerequisite: History 1 & 2) An inquiry into the major philosophies which helped shape our institutions. Puritan concepts; views of the independents; pre-Revolutionary society and thought and the notion of independence; the Constitution as it represents a compromise between the conservative and liberal traditions; Jeffersonian and Jacksonian democracy; social, economic, and political ramifications of the slavery question. Triumph of the nationalist view; recent tendencies; liberty in American society.

HIST. 126 & 127
American Civilization 6 credits
(Prerequisite: History 1 & 2) An analysis of leading economic, social and cultural aspects of American life. The economic, religious and intellectual bases of colonial American life; impact of the Revolution; sectional differences; growth of democracy and the reform movements. The growth of industry, agriculture and the agrarian discontent; the disappearance of the frontier; labor and immigration; literature and the arts; religious tendencies; diffusion of knowledge.

HIST. 128 & 129
Special Topics in American History 6 credits
(Prerequisite: History 1 & 2) An analysis of selected topics in American political internal history from the Colonial Period to the end of the Nineteenth Century. Extensive readings are required. Restricted to History majors in senior year.

HIST. 130 & 131
Twentieth Century United States 6 credits
(Prerequisite: History 1 & 2) An intensive study of American development from 1900 to the present. Stress will be placed on the Roosevelt Era and its Progressivism. Wilson's New Freedom; diplomacy of the First World War; the return to "normalcy," the Great

Depression and the New Deal; Roosevelt and world politics; and origins and consequences of World War II.

HIST. 135
European History 1648-1789 3 credits
Study of the major political, social, economic and intellectual movements in Europe from the rise of royal absolutism until the outbreak of the French Revolution.

HIST. 136-137
American Ideas and Culture 6 credits
History of American art, architecture, literature, and thought. Colonial developments and the American Enlightenment. Romanticism and the growth of American culture. The post-Civil War development of Realism in American art and literature. The intellectual response to the new industrial order. The American mind in the 1920's. The intellectual and cultural response to the depression. Post-World War II developments in American thought and art.

HIST. 140
England 1066 to 1688 3 credits
Fusion of Anglo-Saxon and Norman institutions. Plantagenet period; Hundred Years War; Tudor absolutism; Henry VIII and Reformation; Elizabeth I; Renaissance and Elizabethan literature; the Stuarts; Colonialism; Commonwealth; Restoration; Revolution of 1688.

HIST. 141
England 1688 to Present 3 credits
Results of 1688; Parliamentary rule; Cabinet government; Political parties; Industrial revolution; 19th Century reforms; building of a British Empire; World War I; problems of readjustment; World War II; end of Imperialism.

HIST. 142
English Constitutional and Legal History to 1485 3 credits
Anglo-Saxon basis; fusion of Anglo-Saxon and Norman political institutions; Angevin innovations; Magna Carta; concept of representation; beginnings of the Common Law; jury system; content for government; emergence of Parliament; the refinement of government.

HIST. 143
English Constitutional and Legal History 1485 to Present 3 credits
Tudor absolutism; struggle between royal prerogative and Parliament; rise of House of Commons; Parliamentary supremacy after 1688; development of Cabinet government; democratic reforms; Parliamentary Bill of 1911; extension of administrative law.

HIST. 150 & 151
History of Imperial Russia and the Soviet Union 6 credits
(Prerequisite: History 3 & 4) From the crystallization of political forms in the 9th Century through the Kievan State, Rise of Moscovy, Empire, Revolution of 1917 and the U.S.S.R. to the end of World War II. A critical analysis of the political, cultural, spiritual and psychological factors in Russian History.

HIST. 161 & 162
Latin American History 6 credits
(Prerequisite: History 1 & 2; 3 & 4) Pre-Colombian America; the Spanish and Portuguese colonial era, developments to the early Nineteenth Century. The Latin American Republics, Castroism, The Alliance for Progress, with special stress on inter-American problems.

HIST. 170
Colonial America, 1607-1763 3 credits
The European background to the Age of Discovery; the founding of the British-American colonies; their political, economic and cultural development; British colonial policy and administration; the development of an American civilization.

HIST. 171
The American Revolution, 1763-1789 3 credits
Background to the War for Independence; British imperial policy; the development of economic and ideological conflicts; the military contest; British ministerial policy and the parliamentary opposition; the Confederation; the formation of the Constitution.

H/PS 188
Ethnic & Racial Minorities in Northeastern Pennsylvania 3 credits
Film-seminar approach to study of various ethnic groupings in Northeastern Pennsylvania. Funded by National Endowment for Humanities. Seeks to achieve better understanding of the immigrant's problems and his accomplishments through use of documentary and feature films and by panels composed of the ethnic minorities themselves.

HIST. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students. Content determined by mentor.

MATHEMATICS

MR. BEIDLER, *Chairman*

In addition to its major program for undergraduates, the department directs a summer Institute in Computer Science and Mathematics for Secondary School Teachers of Mathematics and Related Disciplines funded by the National Science Foundation.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Math. 14-21	Analysis I-II	4	4
COGNATE	Phys. 11-12	Elements of Physics I-II	4	4
GE AREA III	Communications	Electives	3	3
GE AREA IV	Humanities	Elective		3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Elective	3	
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			18	18
		SOPHOMORE		
MAJOR	Math. 21-101	Analysis III — Differential Equations	4	4
COGNATE	CMPSC 20-25	Introduction to Computer Science	3	3
GE AREA II	Social/Behavior	Electives	3	3
GE AREA III	Communications	Elective		3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	T/RS	Theology/Religious Studies Elective	3	
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			17	17
		JUNIOR		
MAJOR	Math.	Electives	6	6
COGNATE	Electives	Electives	3	3
GE AREA II	Social/Behavior	Electives	3	3
GE AREA IV	Humanities	Elective	3	
GE AREA V	Phil. 110	Philosophy of Human Conduct		3
GE FREE	Elective	Elective		3
			15	18
		SENIOR		
MAJOR	Math	Electives	6	3
COGNATE	Electives	Electives	3	6
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies	3	3
			15	15

TOTAL: 133 credits

The usual cognates for mathematics are Computer Science, Physics, Education and Psychology. With the permission of the department chairman, Economics, Biology, Chemistry are also possible cognates. If Education is chosen as a cognate, the number of required mathematics credits is reduced to 30 in the Major.

For GE Area III elective, the Dept. recommends Engl. 2 (Oral Commun.) or Engl. 7 (Writing Center), except for those students who are notified that they are qualified in speech or writing.

MATH 3
Quantitative Methods I 3 credits
Finite Mathematics including theory of sets and deductive logic; analytic geometry; algebraic and transcendental functions; mathematics of finance.

MATH. 4
Quantitative Methods II 3 credits
Matrix methods and linear algebra, including linear programming; differential and integral calculus; probability theory; stresses the use of modern mathematics in solution of business problems.

MATH. 7 & 8
Finite Mathematics 6 credits
A terminal course covering a modern treatment of finite mathematics with applications in the social and management sciences.

MATH. 13
Freshman Mathematics 4 credits
An intensified course covering the topics of algebra and trigonometry.

MATH. 14
Analysis I 4 credits
The beginning of a twelve credit sequence covering the topics of analysis.

MATH. 21 & 22
Analysis II & III 8 credits
(Prerequisite: Mathematics 14, or equivalent) An integrated course covering the topics of calculus using modern methods.

MATH. 101
Differential Equations 4 credits
(Prerequisite: Mathematics 22) A treatment of ordinary differential equations with applications.

MATH. 103
Advanced Differential Equations 3 credits
(Prerequisite: Mathematics 101) The treatment of special differential equations and partial differential equations and their applications.

MATH. 104
Statistical Analysis 3 credits
(Prerequisite: Mathematics 22) Curve plotting, frequency curves, averages, measures of dispersion, theory of correlation. Applications to the natural and social sciences.

MATH. 105
Geometry 3 credits
Euclidean and projective geometry. Transformations and Invariants.

MATH. 106 & 107
Advanced Analysis 6 credits
A continuation of the calculus beyond infinite series. It will include implicit function theory, Fourier series, gamma functions, Bessel functions, Laplace transformations, complex variables, and calculus of variations.

MATH. 108
Modern Algebra 3 credits
(Prerequisite: Mathematics 22 or permission of department head) Fundamental ideas and properties of groups, rings, fields, polynomials over a field.

MATH. 111
Linear Algebra 3 credits
(Prerequisite: Mathematics 108) Vectors, n-dimensional vector space. Determinants, matrices. Transformations, quadratic forms and applications in 3-space.

MATH. 113 & 114
Mathematics Seminar Variable credit
(Permission of the department head required) Designed to allow the student of demonstrated ability to cover topics of modern mathematics with or without benefit of formal lectures.

MATH. 115
Thesis Variable credit
(Prerequisite: 24 credits in mathematics) A student's results of the investigation of a specific mathematical topic.

MATH 120
Topology 3 credits
(Prerequisite: Math. 22) An introduction to point-set topology. Among the topics to be discussed are connectedness, compactness, separation axioms, and metric spaces.

MATH 121
Complex Variables 3 credits
(Prerequisite: Math. 106 or Math. 120) An introduction to the theory of complex variables: The calculus of functions of complex variables; Transformations; conformal mappings; residues and poles.

MATH. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor.

MATH. 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in mathematics. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department.

MILITARY SCIENCE

LT. COL. TERZOPOULOS, *Chairman*

The primary objective of the ROTC program is to develop leadership capabilities and to train future officers for both the active and reserve components of the United States Army.

Freshmen who are between the ages of 17 and 24, U. S. citizens, and physically qualified, may enter the Basic Course. Entrance into M.S. 1-2 and M.S. 21-22 is voluntary.

Enrollment in the Advanced Course (M.S. 101) is highly selective. Students must pass a medical examination, a Cadet Evaluation Battery, a scholastic aptitude test (SAT or ACT), maintain a "C" average in their first two years of undergraduate work, and must be recommended by a board of faculty and Military Science officers. Advanced cadets attend a six-week ROTC summer camp at the end of their Junior Year. Upon completion of the Advanced Course and upon graduation from the University, the cadet is offered a Regular Army or Reserve Commission. Commissions are offered in any one of the 18 branches of the Army based on the student's choice, his educational background, and the needs of the service.

Advanced Course students receive $100 per month while in school and approximately $265 per month plus travel expenses while at Summer Camp. The Army Scholarship Program offers financial assistance to outstanding young men in the two- or four-year ROTC program. Each Scholarship provides for free tuition, textbooks and laboratory fees in addition to paying a subsistence allowance of $100 per month for 10 months each year the Scholarship is in effect. Cadets selected by the President of the University and the Professor of Military Science may apply for the one-, two- or three-year scholarship program.

Sophomores, who did not elect the Basic Course, may apply to the Professor of Military Science, not later than 31 March, for admission to the Two-Year ROTC Program. Students with prior enlisted service (veterans) are eligible to enroll in the ROTC program.

M. S. 1 & 2
Military Science I 2 credits
The United States Defense Establishment: Organization of the Army and ROTC; United States Army and National Security. Leadership Laboratory: Basic Principles of leadership and management.

M. S. 21-22
Military Science II 4 credits
(Prerequisite: M. S. 1 and 2, or the equivalent) Introduction to Tactics and Operations: Map and aerial photograph reading; basic tactics. American military history. Leadership Laboratory.

M. S. 101
Military Science III: Military Leadership and Management 3 credits
(Prerequisite: M. S. 21-22, or equivalent) Analysis of the role of the leader in setting organizational goals and standards; motivating group and individual performance, problems and complications of the exercise of authority, and senior-subordinate relationships. The course analyzes the managerial functions and techniques involved in decision-making, psychology of leadership, delegation of authority and responsibility, span of control, and planning and coordinating. (This course is part of the General Education Social and Behavioral Sciences Area (Area II) and may be used toward degree requirements.)

M. S. 102
Military Science III: Advanced Military Leadership and Management 3 credits
(Prerequisite: M. S. 101) Leadership; military teaching principles; branches of the Army. Fundamentals and Dynamics of Military Team: Small unit tactics; communications; ROTC summer camp orientation; Counterinsurgency. Emphasizes the junior leader's responsibilities to, and understanding of, subordinates. Leadership Laboratory.

M. S. 121 & 122
Military Science IV 6 credits
(Prerequisite: M. S. 101-102) Leadership and Management: Army administration; military justice; the Army readiness program; service orientation; the Military Team. Staff organization and teamwork; operations; logistics. Leadership Laboratory.

NOTE: M.S. credits are not substituted as electives in the degree program except as indicated with respect to M. S. 101 above; however, they are included in the student's QPI.

PHILOSOPHY

DR. FAIRBANKS, *Chairman*

The basic objectives of the Philosophy Department may be stated as follows:
1) To inspire the student to come to grips with the basic philosophical problems implicit in his experience of the self, others and the universe, together with the question of their relations to ultimate transcendence (God and immortality);
2) To lead him to develop habits of clear, critical thinking within the framework of both an adequate philosophical methodology and accepted norms of scholarship;
3) To introduce him to reading critically the great philosophers, past and present;
4) Finally, through this entire process, to help him to formulate for himself a satisfactory philosophy of life or world-view. Hopefully, such a formulation will ground both his own search for fulfillment as a free person and his meaningful contribution to the world community. In this fashion the Department exercises the specifically illuminating and unifying functions of philosophy as set forth in the basic objectives of liberal education adopted by this University.

For the AB degree in Philosophy, the major must take 24 upper division credits in Philosophy in addition to the six credits required of all students. These 24 credits must be distributed as follows: logic (3); history of philosophy (6); contemporary philosophy (6); thematic or problem-centered courses (6); free (3).
Classified as history of philosophy are: Phil. 106, 109, 113, 114, 121, 122, 131, 140.
Classified as Contemporary: Phil. 117, 118, 119, 125, 126, 127, 128, 129, 142, 143.
Classified as Thematic or Problem-centered: Phil. 107, 120, 130, 132, 133, 135, 141.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Phil. 20-110	Introduction — Phil. of Human Conduct	3	3
GE AREA I	Nat. Sci./Quant.	Natural Science 2*		3
GE AREA III	Communications	Foreign Language*	3	3
GE AREA III	Communications	Elective		3
GE AREA IV	Humanities	Elective		3
GE AREA V	T/RS	Theology/Religious Studies Elective	3	
GE FREE	Intd.	Interdisciplinary Elective	3	
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			13	16
		SOPHOMORE		
MAJOR	Phil. 115—Elec.	Logic — Thematic Elective	3	3
MAJOR	Phil. Elec.	History of Philosophy Elective		3
GE AREA I	Nat. Sci./Quant.	Natural Science 3-4*	3	3
GE AREA II	Social/Behavior	Electives	6	6
GE AREA V	T/RS	Theology/Religious Studies Elective	3	
PHYS EDUC	Ph. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Philosophy	Thematic and Contemporary Electives	3	3
MAJOR	Philosophy	History of Philosophy Elective		3
COGNATE	Electives	Electives	6	6
GE AREA IV	Humanities	Electives	6	6
GE AREA V	Phil.-T/RS	Philosophy/Religious Studies Elective	3	
			18	18
		SENIOR		
MAJOR	Philosophy	Contemporary and Free Electives	3	3
COGNATE	Electives	Electives	6	6
GE AREA IV	Humanities	Elective		3
GE FREE	Electives	Electives	6	3
			15	15

TOTAL: 127 credits

*Departmental recommendations are indicated by an asterisk.

As a freshman Interdisciplinary Elective, the department recommends The Nature of Nature (Nat. Sci. 1), team-taught by a philosopher and physicist. The department also recommends that Natural Science 2-4 be taken in the next three semesters to meet the GE AREA I requirement.

In the Cognate area of 24 hours, the department requires that 12 credits be focused in one field.

It should be noted that six credits not required by the department in the Major area are added to the Free Area in senior year. These may be taken in any field including philosophy.

PHIL. 20
Introduction to Philosophy 3 credits
The purpose of this course is to awaken the beginning student to the basic questions and answers available in philosophy. Contemporary methods are used to understand both current and classical philosophical literature. While important professional texts are used, this course is kept flexible enough to allow the individual professor to develop his own approach to philosophical problems.

PHIL. 21
Metaphysics 3 credits
A textual inquiry into the adequacy of philosophers' answer to the fundamental question, "What is?" Special attention will be given to Plato, Aristotle, Aquinas, Kant's critical philosophy, and the issues of nature and history.

PHIL. 26
Philosophy of Man 3 credits
This course will deal with the basic questions that confront man. This will involve an analysis of the social situation, a discussion of the implications of this situation for the person as he relates to his environment, and a search for the meaning of the 'whole person'.

PHIL. 28
Logic: The Art of Communication 3 credits
This course will center on a study of the principles of critical thinking, fallacies, degrees of certitude, syllogistic reasoning, language and thought. The practical aspect of logic as it applies to life will be stressed rather than the formal system of logic.

PHIL. 106
Philosophy of Education 3 credits
An examination of representative modern systematic philosophies of education with a critical analysis of the answers that each system of philosophy provides to the important questions concerning the nature of knowledge, of value, of man and of society. Specific problems which arise in the study of the aims and practices of education will be analyzed according to theories of the philosophical systems examined.

PHIL. 107
Philosophy of Law 3 credits
A study of the various justifications of law and their implications. Special consideration will be given to the problems of civil disobedience and the force of law in private institutions.

PHIL. 110
Philosophy of Human Conduct 3 credits
A philosophical study of man's moral experience in terms of his meaning as a person. Themes investigated will include freedom of choice and its limitations in moral responsibility, problems of conscience, the meaning of moral value, the norm of morality, natural obligation and human rights and their implications for social involvement of the person and his relation to authority. Current moral relativism including "situation ethics" will also be considered.

PHIL. 113
Ancient Philosophy 3 credits
The Pre-Socratics, Plato, Aristotle and their immediate successors. Special emphasis on the Theory of Knowledge, the Metaphysics and Philosophical Anthropology of Plato and Aristotle.

PHIL. 114
Medieval Philosophy 3 credits
The origin and character of medieval philosophy, early Christian Philosophy, the controversary of the universals, outstanding thinkers of the early scholastic period and the influence of Islamic and Jewish philosophy. The 13th Century: Franciscan Philosophers, St. Thomas Aquinas, Averroism and Duns Scotus. The Decline: Ockham and his followers and Mysticism. The course will conclude with the Renaissance revival in Suarez.

PHIL. 117
Existentialism 3 credits
A critical study of key concepts in existential philosophy through selective works of Kierkegaard, Sartre, Marcel, and Jaspers. Emphasis is placed on the concepts of self and knowledge as they are presented in the writings of these philosophers.

PHIL. 118
American Philosophy 3 credits
A study through readings and commentary of the so-called Classical Period in American Philosophy. This period witnessed the flowering of the only distinctively American philosophy: Pragmatism. During the course the emphasis is given to the impact of these philosophers upon the contemporary scene. Featured are the philosophers Peirce, James, Royce, Dewey, Santayana, and Whitehead.

PHIL. 119
Philosophy of Science 3 credits
Lecture and seminar techniques are used to introduce the student to the fundamental ideas and current research in the philosophy of science. The guiding concept is the meaning of the scientific method. To pinpoint this method the following Twentieth century movements in the philosophy of science are carefully analyzed: Pragmatism (C. S. Peirce), Analytic Philosophy (Ayer, Wittgenstein), Positivism (Reichenbach), and Contemporary Realism (Whitehead).

PHIL. 121
Modern Philosophy I 3 credits
The Renaissance Background: Petrarch and the humanist movement: Galileo and the beginnings of modern science. Descartes: mathesis universalis; the difficulties of the Cartesian method; solution in the one substance of Spinoza. British Empiricism: Locke and the problem of substance; Berkeley's 'Esse est percipi'; culmination in Hume and the doctrine of perceptual atomism.

PHIL. 122
Modern Philosophy II 3 credits
Leibniz: Cartesian and Spinozistic heritage, the problem of universal science; the Monodology Kant: influences of Leibniz, Hume and Newton; the "Copernican revolution" and "Transcendental Criticism." Fichte's transcendental idealism and Schelling's absolute idealism. Hegel and Phenomenology of Mind; reality as dialectical. Survey of later trends: Schopenhauer, Nietzsche, Bergson.

PHIL. 128
Phenomenology 3 credits
An analysis of the primary works of those philosophers who have influenced the development of the phenomenological method. Special emphasis on an attempt to attain a comprehensive view of phenomenology as a methodology. Main sources will be Husserl, Heidegger, Sartre and Merleau-Ponty.

PHIL. 129
Marxism 3 credits
A consideration of Marx's philosophical anthropology, aesthetics and epistemology with a survey of contemporary Marxism (Marcuse, Bloch, Kolakowski et al.) and its critics (Voegelin, Wilson, theism et al.).

PHIL. 130
Personal and Social Ethics 3 credits
(Prerequisite: Philosophy 110) A philosophical investigation of man's specific obligations and rights arising from his relation to God, to his own person, to his fellowmen as equals and concluding with a brief analysis of man's social nature with its implications for the family and civil society.

PHIL. 131
Political Philosophy 3 credits
(Prerequisite: Philosophy 110) A philosophical and ethical analysis of the social nature of man with an emphasis on the modern social question: social order and its reform. The ethics of the family, of the nation and its lesser groups and of the community of nations; the ethics of the political community, including the sovereignty and functions of the state and state dynamics.

PHIL. 132
Medical Ethics 3 credits
(Prerequisite: Philosophy 110) Detailed analysis of the ethical aspects of abortion, euthanasia and preservation of life, sterilization and contraception, artificial insemination, experimentation on human beings, hypnosis, electroshock therapy and psycho-surgery. Religious hospital codes, physician-patient relationships and spiritual care of the patient will also be examined. Recommended for pre-medical students.

PHIL. 133
Business Ethics 3 credits
(Prerequisite: Philosophy 110) The personal and social ethics of the major areas of decision-making in business principles and case work will receive equal stress. Recommended for business majors.

PHIL. 136
Current Public Ethical Problems 3 credits
Heroin, war, sex, transplants, lobbying, the cities, electioneering, the media, youth, entertainment, abortion, minorities, wealth, Wall Street, pornography, machines, hard hats, the military, news handling, revolt, long hair, poverty, etc. (The student will be required to subscribe to two weeklies, of opinion and/or of news. Cost: Approximately $20.00).

PHIL. 141
Art and Philosophy 3 credits
A study of different periods in the history of art as indicative of and illustrative of the contemporary philosophy of those periods. Slides of works of art will be used.

PHIL. 142
Philosophy of Camus 3 credits
The fundamental themes of the Absurd and Rebellion as seen in *The Myth of Sisyphus, The Rebel, The Stranger, The Plague* and *The Fall* of Albert Camus. Selections from other works including his plays. Also a study of his ethics, his thirst for life and his search and enjoyment of the beautiful. Commentaries by Germaine Bree, Philip Thody, Emmet Parker and David Denton as aids to seeing Camus in the historical, political and geographical setting of North Algeria and France.

PHIL. 143
Philosophy of Josiah Royce 3 credits
Royce's interpretation of thought and reality with special emphasis on his ethical and religious philosophy: the meaning of will, freedom, evil, loyalty and Beloved Community. Royce's place in American thought and his influence on American philosophy.

Dr. Matt Fairbanks,
Chairman, Department of Philosophy

PHIL. 144
The Meaning of Truth 3 credits
A historical analysis, from the viewpoint of Philosophy, of the question posed by Pontius Pilate: "What is truth?" A close textual analysis of St. Thomas' *De Veritate*. Question I, will serve as the basis of this course. From this perspective of the middle a glance back as far as Plato and a glance ahead as far as Nietzsche will be incorporated into the course.

PHIL. 148
The Philosophy of Communication 3 credits
This course will center on the phenomenon of communication from the non-verbal through the mass media. These observations will serve as a starting point for a metaphysics and an ethics of the interpersonal and social. Special attention will be given to the communication of emotion.

PHIL. 149
Christian Philosophy 3 credits
The philosophical consensus discoverable among those who are formally Christian. The student should be ready to engage in a serious study of the existence and nature of God, human personal immortality, freedom, rights, and the purpose of human life.

PHIL. 191 & 192
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in Philosophy. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department

PHYSICAL EDUCATION

MR. OCORR, *Chairman*

The Physical Education Department aims to improve the physical fitness level of each student and improve and increase students' recreational skills. Emphasis is placed on instruction in a wide variety of popular sports, recreational and competitive athletics, especially those with carry-over value for post college years.

Physical Education is required two periods per week through the freshman and sophomore years. One credit hour is granted in Physical Education each semester.

Every regularly enrolled freshman and sophomore student must satisfy the Physical Education requirement unless excused by the Physical Education Department.

There is an official physical education uniform to be purchased at the University.

It is possible to be excused from Physical Education classes by application to the Physical Education Department if (a) a physician certifies that a student, for medical reasons, should not engage in vigorous physical activity; (b) a student is a Veteran; (c) a student is a member of an intercollegiate varsity or freshman team; (d) the department deems it advisable.

Grading: S—Satisfactory.
U—Unsatisfactory, requiring repetition of course.
These grades will not be computed in the Quality Point Index.

PHYS. ED. 1 & 2
Basic Physical Education 2 credits
Basic physical fitness and training in sports, especially volley ball, handball, softball, touch football, basketball, field hockey, archery, dance, soccer and other team activities.

PHYS. ED. 23 & 24
Advanced Physical Education 2 credits
Advanced physical fitness with special elective programs in carry-over activities of golf, tennis, jogging, self-defense, weight-training, paddleball, with co-ed class opportunities.

EDUC. 108
High School Coaching 3 credits
Especially useful for those who wish to teach and coach in high school, this course is concerned with coaching psychology, organization, training and taping, and fundamentals of sports among other topics.

John J. Long Athletic Center

PHYSICS

DR. McGINNIS, *Chairman*

The science of physics is concerned principally with matter and energy, the nature of each, and with their interactions. It is the fundamental science for most branches of engineering and has innumerable applications in medicine, industry and everday life. The objectives of the Department of Physics are: 1. to impart knowledge of the general principles of physical science and to show applications to human problems; 2. to train the student in logical and accurate methods of observation, measurement and analysis; 3. to provide adequate training in the fundamentals of physics as a basis for medical, engineering and other courses of study; 4. to encourage those students with exceptional aptitude to pursue graduate work in physics.

The Department offers the Bachelor of Science Degree in a Physics Concentration and in an Electronics Concentration.

PHYSICS MAJOR

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Physics 11-12	Elements of Physics I-II	4	4
COGNATE	Math 13-14 *or* Math 14-21	Pre-Calculus Math. - Calculus I Calculus I-II	4	4
GE AREA III	Communications	Elective	3	
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			15	15
		SOPHOMORE		
MAJOR	Physics 21-22	Elements Modern Physics — Statistics	4	3
COGNATE	Math. 21-22 *or* Math 22-101	Calculus II-III Calculus III — Differential Equations	4	4
GE AREA II	Social/Behavior	Electives	3	3
GE AREA III	Communications	French, German or Russian Language*	3	3
GE AREA IV	Humanities	Electives	3	3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			18	17
		JUNIOR		
MAJOR	Phys. 104-105	Electricity and Magnetism I-II	4	4
MAJOR	Phys. 102-110	Mechanics — Atomic Physics	3	4
COGNATE	Math. 101 - Phys. 118	Differential Equations — Mathematical Physics	4	4
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
			17	18
		SENIOR		
MAJOR	Phys. 111-123	Nuclear Physics—Advanced Mechanics	3	3
MAJOR	Phys. 121	Physics Research	1	1
GE AREA II	Social/Behavior	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies	3	3
GE FREE	Elective	Elective	3	
			16	13

TOTAL: 129 credits

ELECTRONICS MAJOR

	Dept. and No.	Descriptive Title of Course	Credits FALL	SPRING
		FRESHMAN		
MAJOR	Phys. 11-12	Elements of Physics I-II	4	4
COGNATE	Math. 13-14 or Math 14-21	Pre-Calculus Math. — Calculus I Calculus I-II	4	4
GE AREA III	Communications	Elective	3	
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			15	15
		SOPHOMORE		
MAJOR	Phys. 21-24	Elements of Modern Physics—Circuit Anal.	4	4
COGNATE	Math. 21-22 or Math. 22-101	Calculus II-III Calculus III — Differential Equations	4	4
GE AREA II	Social/Behavior	Electives	3	3
GE AREA III	Communications	French, German or Russian Language*	3	3
GE AREA IV	Humanities	Electives	3	3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			18	18
		JUNIOR		
MAJOR	Phys. 104 - Elective	Electricity and Magnetism I—Elective	4	4
MAJOR	Phys. 106-107	Electronic Principles & Circuits I-II	4	4
COGNATE	Math. 101 - Phys. 118	Differential Equations — Math. Physics	4	4
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
			18	18
		SENIOR		
MAJOR	Phys. 108-109	Advanced Electronics—Frequency Circuits	4	4
GE AREA II	Social/Behavior	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil.-T/RS	Philosophy and/or Relig. Stud. Electives	3	3
GE FREE	Elective	Elective	3	
			16	13

TOTAL: 131 credits

English 7 (Writing Center) recommended for Communications elective in freshman year. Engr. 44 acceptable as substitute for Physics 24. Other departmental recommendations indicated by an asterisk.

PHYS. 1 & 2
General Physics 8 credits
(Prerequisite: Mathematics 13-14) General college course for pre-medical, pre-dental and biology majors. Mechanics, heat, electricity and magnetism, sound, light and modern physics. Three hours lecture and recitation and two hours laboratory.

PHYS. 7
Introduction to Astronomy 3 credits
Introductory course in astronomy for non-science students. Survey of solar systems, stars, and galaxies. Observational basis of Astronomy. Astronomy vs. Astrology. Opportunity for observation will be provided.

PHYS. 8
Everyday Physics 3 credits
Practically oriented course correlating physical concepts with everyday problems. Sufficiently familiarizes students with theory of operation of radios, T.V., high fi, automobiles, electrical appliances, and the like so that simple repairs can be effected. Laboratory portion stresses troubleshooting and repair of simple malfunctions. 2 hours lecture and demonstration. 2 hours laboratory.

PHYS. 11 & 12
Elements of Physics 8 credits
(Corequisite: Mathematics 14-21) Basic college course, employing methods of the calculus, for physics, electronics, mathematics, and chemistry majors. Mechanics and heat, sound, light, electricity and magnetism. Three hours lecture and recitation and two hours laboratory.

PHYS. 21
Elements of Modern Physics 4 credits
(Prerequisite: Physics 12) Introductory Modern Physics course for physics and electronics majors; also recommended for other science students. Review of classical physics, introduction to atomic and nuclear physics. Three hours lecture and recitation and two hours laboratory.

PHYS. 22
Statistical Physics 3 credits
(Prerequisites: Physics 21, Mathematics 22) An intermediate course designed to show how the basic notions of atomic theory lead to a coherent conceptual framework capable of describing and predicting the properties of macroscopic systems consisting of many atoms or molecules. It provides an introduction to the subjects of Statistical Mechanics, Kinetic Theory, Thermodynamics, and Heat. Recommended for Physics majors. Three hours lecture.

PHYS. 24
Circuit Analysis 4 credits
(Prerequisite: Physics 21) Intermediate course treating Kirchoff's Laws, resistance networks, steady state and transient condition in Rc, Rl, and RLC networks, Thevenin's and Norton's Theorems, and simple electronic devices and their equivalent circuits. Three hours lecture and two hours laboratory per week.

PHYS. 102
Mechanics 3 credits
(Prerequisite: Physics 12; Corequisite: Mathematics 101) Introduction to theoretical mechanics treating statics and dynamics of particles and extended bodies; motion of bodies by conservative and dissipative forces; energy relations; generalized coordinates and Lagrange's equations. Recommended for physics majors. Three hours lecture.

PHYS. 103
Optics 4 credits
(Prerequisite: Physics 21) Review of Geometrical optics. Image formation by thick and thin lenses. Lens aberrations. Introduction to plane and spherical wave equations. Fraunhofer and Fresnel diffraction. Interference. Polarization. Introduction to quantum optics using the LASER. Three hours lecture. Two hours laboratory.

PHYS. 104
Electricity and Magnetism I 4 credits
(Prerequisites: Physics 21; Mathematics 101 may be taken concurrently) Analytical treatment of electrical and magnetic theory; electrostatic fields; direct currents and circuits; measurements; magnetism. Required of physics and electronics majors. Three hours lecture and two hours laboratory.

PHYS. 105
Electricity and Magnetism II 4 credits
(Prerequisites: Physics 104, Mathematics 101) Electromagnetic induction, circuit transients, alternating current circuits; measurements; electromagnetic fields and waves. Required of physics and electronics majors. Three hours lecture and two hours laboratory.

PHYS. 106
Electronic Principles and Circuits I 4 credits
(Prerequisites: Physics 12, or 20; Engr. 44; Mathematics 22) General principles of electronic vacuum tubes and semiconductor devices; diodes and rectifiers; tube and transistor operation, characteristics; equivalent circuits; basic amplifier circuits. Required of electronics majors and recommended for physics majors. Three hours lecture and two hours laboratory.

PHYS. 107
Electronic Principles and Circuits II 4 credits
(Prerequisite: Physics 106) General analysis of vacuum tube and transistor electronic amplifiers including broad and narrow band types; power amplification; power supplies; modulation and demodulation. Three hours lecture and two hours laboratory.

PHYS. 108
Advanced Electronics 4 credits
(Prerequisite: Physics 107) An extension of the basic electronic causes treating additional

vacuum tube and transistor circuits and systems such as oscillators and signal generators, various special purpose circuits and basic analog and digital circuits and their operations. Three hours lecture and two hours laboratory.

PHYS. 109
High Frequency and Pulse Circuits 4 credits
(Prerequisite: Physics 108 and Physics 118) Review of electromagnetic wave theory. Transmission line and wave guide theory. Measurement of high frequency signals. Introduction to the circuit configurations used for the generation and processing of pulse, digital, and switching wave forms. Three hours lecture and two hours laboratory.

PHYS. 110
Atomic Physics 4 credits
(Prerequisites: Physics 21 & Mathematics 101) Intensive and quantitative treatment of modern Atomic Physics with particular emphasis on atomic structure, introducing the principles and techniques of the Quantum Theory. Required of physics majors. Three hours lecture and three hours laboratory.

PHYS. 111
Nuclear Physics 3 credits
(Prerequisite: Physics 110) The study of nuclear models and force theories. Natural and induced radioactivity, theory and measurement of alpha, beta and gamma decay; nuclear reactions including fission and fusion. Three hours lecture. Required of physics majors.

PHYS. 112
Electronic Instrumentation for Scientists 4 credits
(Prerequisite: Physics 1 and 2 or Physics 11 and 12) Laboratory oriented course designed to acquaint scientists who have had no formal courses in electronics with the theory and operation of electronic instruments and selected circuits. Course modeled after course developed by Malmstadt-Enke. Two hours lecture and four hours laboratory. Recommended as elective for Physics, Chemistry, Biology, and Psychology majors.

Dr. Gene McGinnis, Chairman, Department of Physics, and Baird-Atomic 3-Meter Spectograph

PHYS. 118
Mathematical Physics I 4 credits
(Prerequisite: Math 101) Determinants and Matrices. Fourier Series. LaPlace Transformations. Introduction to Partial Differential Equations and Boundary Value Problems. Special Functions of Physics, including Bessel Functions, Legendre Polynomials, etc.

PHYS. 120
Undergraduate Physics Thesis 1 credit
(Prerequisites: 24 credits in physics; 20 credits in mathematics) Recommended for senior physics majors; for the purpose of evaluating the student's capacity for individual study and research on a specific physical problem. Assignment of problem to be arranged with the department Chairman.

PHYS. 121
Undergraduate Physics Research Variable credit
Recommended for senior physics and electronics students who pursue a specific physical research project to gain experience with research literature, techniques and equipment. Projects are recommended by members of the department and approved by the Chairman. Written report required.

PHYS. 123
Advanced Mechanics 3 credits
(Prerequisite: Physics 102) Variational principles and Lagrange's equations. Euler's equations of motion; Hamilton's equations of motion; canonical transformations; Hamilton-Jacobi theory. Recommended for physics majors.

PHYS. 153
Mathematical Physics II 3 credits
Functions of a Complex Variable. Infinite Series in the Complex Plane. Theory of Residues. Conformal Mapping. Fourier and La Place Transforms. Advanced Partial Differential Equations. Boundary Value Problems in Physics. Green's Functions.

PHYS. 164
Quantum Mechanics I 3 credits
(Prerequisites: Physics 118, Intermediate Mechanics) Basic postulates of Quantum Mechanics. The Schrodinger Wave equation. Solution of the wave equation in one dimension. Separation of the time dependent equation. The solution of Schrodinger's equation in three dimensions with application to the hydrogen atom. Calculations using the wave function.

PHYS. 165
Quantum Mechanics II 3 credits
(Prerequisite: Physics 164) Use of variation methods as an approximate method of solution. The solution of the Helium atom. Introduction of the angular momentum operator. Perturbation theory. Harmonic pertubations. Time dependent perturbation theory. The solution for the case of the diatomic molecule. The relativistic wave equation and the origin of electronic spin.

PHYS. 170
Solid State Physics I 3 credits
(Prerequisite: Physics 118) The crystal state of matter. Crystal conduction. Lattice energies and vibrations. Elastic constant. Ionic conduction. Properties of metal alloys. Free election theory of metals. Metallic conduction. Band Theory of Solids. Conduction in solids.

PHYS. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor. Suggested topics: particle statistics; solid state physics; quantum theory and electronic structure of atoms; nuclear energy.

PHYS. 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in physics. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department.

POLITICAL SCIENCE

PROF. SCULLY, *Chairman*

The Bachelor of Science degree program in political science aims to accomplish the following objectives: 1. to give the student a thorough understanding of the nature and purposes of civil society; 2. to impart a sound knowledge of the philosophical basis of democracy; 3. to enable him to appreciate the problems of his own government at work; and 4. to relate the American system to the governments of other states in the international community.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Pol. Sci. 11-12	Political Science Inquiry I-II	3	3
COGNATE	Hist. 3-4	Europe: 1500 to the Present	3	3
COGNATE	Math. 3-4	Quantitative Methods I-II	3	3
GE AREA III	Communications	Elective		3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd.	Interdisciplinary Elective	3	
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	Pol. Sci. 101-102	American National Government	3	3
COGNATE	Hist. 1-2	United States History	3	3
GE AREA III	Communications	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct		3
GE AREA V	T/RS	Theology/Religious Studies Elective	3	
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Pol. Sci.	Electives	6	6
COGNATE	Soc. Sci.	Social Science Elective	3	
COGNATE	Pol. Sci. 133	Political Science Statistics		3
GE AREA I	Nat. Sci./Quant.	Electives	3	3
GE AREA V	Phil.-T/RS	Philosophy or Theology/Religious Studies		3
GE FREE	Electives	Electives	3	3
			15	18
		SENIOR		
MAJOR	Pol. Sci.	Electives	6	6
GE AREA I	Nat. Sci./Quant.	Elective	3	
GE AREA IV	Humanities	Electives	6	6
GE AREA V	Phil.-T/RS	Philosophy or Theology/Religious Studies		3
			15	15

TOTAL: 127 credits

In GE AREA I, the department recommends the Parsegian Natural Science sequence (Nat. Sci. 1-3). As Communications elective in GE AREA III, the department recommends English 2 and 7 and Computer Science 20. For GE AREA IV Humanities electives, the department recommends Hist. 150 and Phil. 107, 113, 114, 118, 129, 131 among others. In the GE FREE AREA, the department recommends a modern foreign language in junior year with subsequent language courses to follow in senior year as part of GE AREA IV (humanities). The departmental advisor should be consulted.

POL. SCI. 11-12
Political Science Inquiry 6 credits
An inquiry into the discipline of political science: concepts, value systems, methods, and sub-fields — with emphasis on problem-solving approaches.

POL. SCI. 101 & 102
American National Government 6 credits
(Prerequisite: History 1 & 2) An analysis of society, state, authority, and common good. Forms of government. The constitution, federalism, structure, operations and functions of the three branches.

POL. SCI. 105
State Government 3 credits
The natural constitutional position of the states and the changing federal-state relationships. State governments in actual operation. Emphasis on Pennsylvania and actual problems of procedure and policy.

POL. SCI. 106
Local Government 3 credits
Types and evolution of local government; constitutional and statutory limitations; functions of divisions; structure and operation.

POL. SCI. 107
Public Administration 3 credits
Nature of public administration; structures and statutory limitations; staff organization and flow of command; employment policies, personnel training and management; employee organization; public relations.

POL. SCI. 111
International Relations 3 credits
An examination of the League of Nations, United Nations and America's role in the international community.

POL. SCI. 114
Western Political Thought 3 credits
The role of the state, its auxiliary agencies and functions as viewed by political philosophers from Plato to Marx.

POL. SCI. 120 & 121
American Foreign Relations 6 credits
(Prerequisite: History 1 & 2) This course is identical with History 120-121.

POL. SCI. 122 & 123
American Constitutional and Legal History 6 credits
(Prerequisite: History 1 & 2) This course is identical with History 122-123.

POL. SCI. 124 & 125
American Political and Social Thought 6 credits
(Prerequisite: History 1 & 2) This course is identical with History 124-125.

POL. SCI. 126
The Political Parties of the United States 3 credits
(Prerequisite: History 1 & 2) The origins, nature and functions of parties under our American system of government.

POL. SCI. 127
American Intergovernmental Relations 3 credits
A comprehensive treatment of all aspects of intergovernmental relations including regional and sectional as well as federal-state, federal-local, and state-local.

POL. SCI. 130
British Constitutional History to 1688 3 credits
Fusion of Anglo-Saxon and Norman political institutions; Magna Carta; concept of representation; beginning of the Common Law; jury system; evolution of Parliament; Tudor absolutism; struggle between royal prerogative and Parliament; rise of House of Commons; Parliamentary supremacy after 1688.

POL. SCI. 131
British Constitutional History 1688 to Present 3 credits
British concept of Constitutionalism; development of Cabinet government; supremacy of Parliament; democratic reforms of 19th Century; Parliamentary Bill of 1911; Statute of Westminster 1931; extension of administrative law.
(Pol. Sci. 130-131 is offered every other year.)

POL. SCI. 133
Political Science Statistics 3 credits
The areas treated include frequency distributions, measures of dispersion; simple, partial and multiple correlation; probability; sampling; graphic analysis.

POL. SCI. 134 & 135
Comparative Government 6 credits
A detailed, comprehensive and balanced study of the politics and government of Great Britain, France, Germany, Italy, and the U.S.S.R. in comparison with and contrast to the Institutions of the United States of America.

POL. SCI. 140
Geopolitics 3 credits
(Prerequisites: History 1-2 and History 3-4) A study of geographic factors on World History. Geographic factors in national power and international relations; an analysis of the role of "Geopolitics" with special reference to the current world scene.

POL. SCI. 145
Comparative Communist Systems 3 credits
A study of the political culture of the European and Asian communist states. The USSR, China, Poland and Yugoslavia are especially covered. Processes of socialization and communications in communist systems are analyzed. Similarities and differences to non-communist systems are discussed. Students have opportunity for original research.

POL. SCI. 146
Politics of China 3 credits
The political culture of China: political inheritance of the past and communist present. Comparison to non-communist political systems. Chinese foreign policy vis-a-vis the USSR and USA.

Professor Timothy Scully, Chairman, Department of History and Political Science

POL. SCI. 147
Politics of Race 3 credits
Study of national and international racial problems: comparison of American racial problems to other contemporary racial problems and comparison of contemporary racial situation to historical racial problems of past. Anti - semitism, "Yellow Peril," Sino - Soviet racial problems, as well as black-white racial and ethnic tensions are covered. Racial propaganda is a special concern. Opportunity for research in local or international racial situations.

POL. SCI. 175
Contemporary World Problems 3 credits
Focus on major problems which continually confront world in modern times. U.S. problems emphasized: war, violence, poverty and pollution. Lectures, speakers, discussions, panel reports, films, film strips and slides employed.

H/PS 188
Ethnic & Racial Minorities in Northeastern Pennsylvania 3 credits
Film-seminar approach to study of various ethnic groupings in Northeastern Pennsylvania. Funded by National Endowment for Humanities. Seeks to achieve better understanding of the immigrant's problems and his accomplishments through use of documentary and feature films and by panels composed of the ethnic minorities themselves.

POL. SCI. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor.

POL. SCI. 195 & 196
Senior Tutorial Variable credit
A program open only to senior Honors students majoring in Political Science. The course involves the preparation of a special project which is reported in writing and defended orally before the faculty of the department.

Dr. John J. Dunstone and Psychology students at work

PSYCHOLOGY

DR. DUNSTONE, *Chairman*

The faculty in Psychology seeks to: 1. Prepare the student with a basic, systematic knowledge of psychological method and content; 2. Provide the able student with scholarly learning experiences in preparation for successful graduate study; 3. Complement the offerings of other departments with courses of value to general education or of worth to the specific majors of these departments.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Psych. 23-25	Fundamentals of Psych.—Human Behavior	3	3
COGNATE	Math. 7-8	Math. Discovery I-II	3	3
GE AREA III	Communications	Electives	3	3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
GE FREE	Intd. — Elective	Interdisciplinary Elective — Elective	3	3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	Psych. 26-24	Theories of Personality—Psych. Stat. I	3	3
COGNATE	Biol. 106-107	Heredity — Anatomy & Physiology	3	3
COGNATE	Elective	Elective		3
GE AREA II	Soc. 21-22	Principles of Sociology—Social Problems*	3	3
GE AREA III	Communications	Elective	3	
GE AREA V	Phil. 110	Philosophy of Human Conduct	3	
GE AREA V	T/RS	Theology/Religious Studies Elective		3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Psych. 141-144	Psych. Measurement—Psych. Development	3	3
MAJOR	Psych. 142-143	Experimental Psychology	3	3
MAJOR	Psych. 150-151	Proseminar	2	2
GE AREA II	Soc. 103-104	Criminology — Cultural Anthropology*	3	3
GE AREA IV	Humanities	Electives	6	6
			17	17
		SENIOR		
MAJOR	Psychology	Electives	6	3
COGNATE	Electives	Electives	3	6
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies	3	3
			15	15

TOTAL: 128 credits

Departmental recommendations are indicated by an asterisk.

PSYCH. 23
Fundamentals of Psychology 3 credits
An introduction to the science of psychology with emphasis on the nature of behavioral data, learning paradigms, and assumptions underlying the fundamental principles of development and motivational - emotional processes. Introduction to, and familiarization with, the basic sources in psychology including journals and handbooks.

PSYCH. 24
Psychological Statistics I 3 credits
Descriptive statistics, correlation, regression, sampling, estimation.

PSYCH. 25
Human Behavior 3 credits
(Prerequisite: Psych. 23) The course is designed to increase the student's awareness of his needs, the demands of his environment, his impact upon other persons, in order to promote adaptive adjustment of the student to his environment. Group techniques will be employed.

PSYCH. 26
Theories of Personality 3 credits
(Prerequisite: Psych. 23) The course provides a survey of the major theories of personality, with particular emphasis given to psychoanalytic, phenomenological, and learning-theory approaches to personality.

PSYCH. 141
Psychological Testing 3 credits
(Prerequisites: Psych. 23 & 24) Provides a thorough grounding in principles of testing and measurement; with a detailed study of variance as related to reliability and validity of tests.

PSYCH. 142 & 143
Experimental Psychology 6 credits
(Prerequisites: Psych. 23 & 24) The first half of the course is concerned with experimental study of sensory mechanisms and perceptual phenomena, and the second half with instrumental and classical conditioning. Supervised individual experimentation. Two hours lecture. Three hours laboratory.

PSYCH. 144
Psychology of Development 3 credits
(Prerequisite: Psych. 23) Psychological phases of human development throughout the life span with emphasis upon the behavioral importance of childhood; implications for education and counseling; for home and society.

PSYCH. 145
Abnormal Psychology 3 credits
(Prerequisite: Psych. 23) A survey of concepts of normality and abnormality, approaches to diagnosis, and treatment systems.

PSYCH. 146
Psychological Statistics II 3 credits
(Prerequisite: Psych. 24) An introduction to scientific method and experimental design. Emphasis is placed on the kinds and sources of error in experimentation, methods of control and design of experiments.

PSYCH. 147
Physiological Psychology 3 credits
(Prerequisite: Psych. 23) Consideration is given to the relationship between behavior and the structure and function of the organism. Emphasis is placed upon the neurological bases of sensation, perception and learning. Two hours lecture. Three hours laboratory.

PSYCH. 148
Social Psychology 3 credits
(Prerequisite: Psych. 23) Social aspects of personality, the development and manifestations of social awareness; sugestion, imitation, group behavior, and the individual mechanisms of social adjustment. Given in alternate years.

PSYCH. 149
Industrial Psychology 3 credits
(Prerequisite: Psych. 23) The principles and techniques in selection and management; job analysis; occupational descriptions; employment procedures; interviews, tests, inventories counseling; industrial training, promotions, transfer, prevention of accidents; management employee relations. May be taken only with the consent of the instructor.

PSYCH. 150 & 151
Proseminar 4 credits
Individually supervised research in selected areas. Focus on the development of basic research, skills and preparation for the senior project. Required of all junior psychology majors.

PSYCH. 160 & 161
Undergraduate Research 4 credits
Individual study and research on a specific problem. May be taken only with the permission of the professor. Lab fee: $20.00.

PSYCH. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to junior Honors students only. Content determined by mentor.

PSYCH. 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in Psychology.

SOCIOLOGY

FR. CONLIN, S.J., Ph.D., *Acting Chairman*

Courses in Sociology seek to provide both the terminal student and the prospective graduate student with a basic understanding of the forces that are part of the structure and function of society. In addition, the courses are designed to help the student interested in the field of Social Work or Social Welfare to attain a pre-professional orientation to these fields.

Students interested in Social Work or Social Welfare are advised to include Soc. 106, 107 and 109 in their planning.

	Dept. and No.	Descriptive Title of Course	Credits	
		FRESHMAN	FALL	SPRING
MAJOR	Soc. 21-22	Principles/Problems of Sociology	3	3
GE AREA I	Biol. 3-4	General Biology I-II*	3	3
GE AREA III	Communications	Elective	3	
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil. 20	Introduction to Philosophy	3	
GE AREA V	T/RS	Theology/Religious Studies		3
GE FREE	Intd.	Interdisciplinary Elective		3
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	Soc. 122-112	Statistics — Social Research Methods	3	3
MAJOR	Sociology	Electives	3	3
COGNATE	Math. 7-8	Finite Mathematics	3	3
COGNATE	Psych. 23 — Elec.	Fundamentals of Psych.—Psych. Elective	3	3
GE AREA V	Phil. 110	Philosophy of Human Conduct		3
GE AREA V	T/RS	Theology/Religious Studies Elective	3	
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	Soc. 117-118	History of Sociological Thought I-II	3	3
COGNATE	Pol. Sci.	Political Science Elective	3	
GE AREA I	Nat. Sci./Quant.	Elective	3	
GE AREA III	Communications	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Phil.-T/RS	Philosophy and/or Religious Studies	3	3
GE FREE	Elective	Elective		3
			18	15
		SENIOR		
MAJOR	Sociology	Electives	3	3
COGNATE	Economics 11-12	Inquiry in Modern Economic Society	3	3
COGNATE	Hist./Pol. Sci.	History/Political Science Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE FREE	Electives	Electives	3	3
			15	15

TOTAL: 127 credits

In the GE AREA I, the department recommends Biology I-II and Natural Science I. In GE AREA III the department recommends Computer Science 20 as one of the electives. It should be noted that three additional credits are added to the FREE AREA rather than being used in the major area.

SOC. 21
Principles of Sociology 3 credits
The basic sociological principles and concepts covering the structure and functions of society. Study of familial, economic and political institutions as examples of structural-functional analysis, social change and stratification. (Prerequisite for all Sociology courses for Sociology majors.)

SOC. 22
Social Problems 3 credits
An analysis of the major social problems affecting modern society. Social legislation, resources for treatment and prevention and deficiencies in existing programs. (Required for Sociology majors.)

SOC. 103
Criminology and Penology 3 credits
Contributions of the various schools to the development of criminology. Physical, psychological and environmental factors in crime. The role of the home, family and social relationships. The methods and instrumentalities of criminal justice, crime prevention.

SOC. 104
Cultural Anthropology 3 credits
Study and comparison of the learned, shared and transmitted behavior patterns and ideals by which man has worked out his social relations, dealt with his environment and defined his place in the world.

SOC. 106
Community Organization 3 credits
A general introduction to the field and process of community organization, both as a field of social work, and as a field of human endeavor. The coordination and financing of welfare activities, methods of appraising community needs and resources, planning and the initiation of welfare services. Services of a voluntary and governmental nature, strategies of power.

SOC. 107
Child Welfare 3 credits
Development of child welfare in the United States. Educational, health, recreational and child labor regulations. Study and treatment of children in their own homes, foster homes and institutions. Child care and protective programs on federal, state and local level.

SOC. 109
The Field of Social Work 3 credits
Growth of social work as a professional endeavor. The scope of social work; case work in the medical, psychiatric, family and child welfare and guidance field; community organization as exemplified in the United Fund and Planning Council, social research, social planning, social group work. Current trends in social work.

SOC. 110
Marriage and Family Life 3 credits
The major focus of attention will be given to the preparation for marriage, selection of a partner, financing the marriage, harmonies and discords in the marriage, problems of parenthood and family administration, successful and happy marriage and family union. Restricted to seniors.

SOC. 111
Urban Sociology 3 credits
A sociological analysis of the development and effects of modern urbanization on human institutions, population trends and social relationships. The inter-relationships, form, structure and organized life in cities, patterns of urban structure and cities of the future. The role of politics, social agencies and elements making for organization and disorganization. Urban planning and redevelopment.

SOC. 112
Methods of Social Research 3 credits
Methods of obtaining, recording, interpreting, and publishing research materials; the use and interpretation of statistical procedures. (Prerequisite: Soc. 122, required for Sociology majors.)

SOC. 113
Juvenile Delinquency 3 credits
Juvenile delinquency as a social problem. Methods of treatment and prevention, including juvenile courts, clinics, probation, parole, correctional institutions, child placement and recreational programs.

SOC. 114
American Minority Groups 3 credits
A study of the cultural background, distribution, assimilation and other adjustments of minority groups; problems arising from the contacts of these people who differ as to race and culture. Prejudice and discrimination as opposed to the democratic ideology. Legislation affecting minority status.

SOC. 117
History of Sociological Thought 3 credits
A history of social and sociological ideas with emphasis on the social thought of Confucius, Mencius, Aristotle, Plato, Augustine, Ibn Khaldun, Vico, Saint Simon and Comte.

SOC. 118
History of Sociological Thought 3 credits
A history of sociological ideas of the Social Darwinists, Durkheim, Weber, Tarde, Tonnies, Sorokin, Thomas Pareto, Lundberg, Parsons and Merton. (Required for Sociology majors.)

SOC. 119
Demography 3 credits
A study of the basic variables of population, birth, death and migration, socio-economic and cultural variables affecting population, growth, projections and forecasts. The chief natural and social demographic theories. Population policies and practices in selected world areas.

SOC. 120
Special Problems 1 credit
Done on an individual basis. Assigned readings, individual research, informal conferences and written reports. Individual has choice in field of sociological study. Restricted to seniors.

SOC. 121
The Sociology of Religion 3 credits
The typological study of religion with the aim of identifying and describing the main forms which religion has assumed in its interaction with secular society. Emphasis will be placed upon the ways in which society, culture and personality influence religion as well as how religion affects society, culture and personality. Some consideration will be devoted to the thinking of Durkheim and Weber, role and function and dysfunctions. Specific analysis of a number of religious sects.

SOC. 122
Statistics for the Sociologist 3 credits
A course in applied statistics oriented especially for the sociologist and social worker. The areas treated include frequency distributions, measures of association such as linear correlations, partials and multiples, probability and hypotheses testing and tests of significance. (Required of Sociology majors.)

SOC. 148
Social Psychology 3 credits
An introduction to the inter-personal relationships of man in his socialization, the relationship of personality and culture, the origin and growth of attitudes and the sociological processes in small human groups.

SOC. 191 & 192
Guided Independent Study Variable credit
A tutorial program open to sophomore and junior Honors students only. Content determined by mentor and student.

SOC. 195 & 196
Senior Tutorial Variable credit
A tutorial program open only to senior Honors students majoring in Sociology.

THEOLOGY AND RELIGIOUS STUDIES

FR. OSTERLE, S.J., *Chairman*

The religious dimension of human life is of such importance that it must be explored in a liberal arts curriculum. Whether one regards the history of man, his grappling with present problems, or his planning for the future, religious faith is always to play a significant role.

The Bachelor of Arts degree program in theology and religious studies requires thirty credit hours in the major field. These may be taken either at the University or at Marywood College or at both institutions. For course descriptions of Marywood courses, consult the Marywood catalog.

The General Education requirement for all students at the University of whatever religious persuasion is six credit hours in theology or religious studies courses. Additionally, they have the option of completing another six hours in either philosophy or theology/religious studies to complete the GE AREA V requirements.

All freshmen students in the college take T/RS 6, a non-denominational introductory course on Belief and Unbelief.

Beyond Freshman year, for the second required course in Theology/Religious Studies, students select from T/RS 23, 114, 135, 136, 138, 170, 182. Additionally, Protestant and Jewish students may select T/RS 140 Jewish Theological Thought or T/RS 141 The Protestant Faith, which are taught, respectively, by a Jewish rabbi and Protestant minister.

Finally, for the six credit hours in GE AREA V which must be chosen from either philosophy or religious studies, students may select from T/RS 108, 110, 132, 137, 140, 141, 150, 151, 160, 171, 175, 177, 180, 181. Exceptions from these sequences may be requested from the Dean of the College.

T/RS 6
Belief and Unbelief 3 credits
Focus on the phenomena of religious experience operative in human history as well as contemporary culture. An analysis of the past and present forms of belief and unbelief.

T/RS 108
Religion and Literature 3 credits
A study of religious attitudes to man in the twentieth century as revealed through selected modern literary works in various genres. In the attempt to read literature for the revelation of religious ideas focused on the nature of man, the course will avoid the technical extremes of both doctrinal theology and literary criticism.

T/RS 110
God in Contemporary Thought 3 credits
Contemporary re-thinking of the doctrine of God in relation to process philosophy, existentialism, and linguistic analysis, and in context of modern atheism and secularism, as seen in the light of the history of theology. Survey analysis of the thought of selected theologians, including Barth, Vahanian, Tillich, Bonhoeffer, Cox, Altizer, van Buren, Hamilton, Ogden, Dewart, Rahner, Schillebeeckx, Baltazar, Moltmann.

T/RS 114
New Testament Theology 3 credits
Major themes of the New Testament with special attention to current study of the four Gospels and their meaning to the modern Christian.

T/RS 132
Symbolic Dimensions of Faith 3 credits
This course is designed to explore the universal symbols that have emerged from the collective experience of mankind, and which man has employed in his attempts to communicate with God, particularly in the Judaic-Christian tradition.

T/RS 135
Contemporary Catholic Thought 3 credits
An advanced examination of contemporary problems discussed in the current literature, showing the historical and doctrinal roots of the underlying theological issue, and the Catholic position. The aim will be to enable the student to correlate what he already knows about his faith with the problems of the contemporary world.

	Dept. and No.	Descriptive Title of Course	Credits FALL	SPRING
		FRESHMAN		
MAJOR	T/RS	First Year Electives	3	3
COGNATE	Elective	Electives	3	3
GE AREA I	Nat. Sci./Quant.	Elective		3
GE AREA II	Social/Behavior	Elective	3	
GE AREA III	Communications	Electives	3	3
GE AREA V	Phil. 20	Introduction to Philosophy		3
GE FREE	Intd.	Interdisciplinary Elective	3	
PHYS EDUC	Ph. Ed. 1-2	Basic Physical Education	1	1
			16	16
		SOPHOMORE		
MAJOR	T/RS	Second Year Electives	3	3
COGNATE	Elective	Electives	3	3
GE AREA I	Nat. Sci./Quant.	Electives	3	3
GE AREA II	Social/Behavior	Electives	3	3
GE AREA III	Communications	Elective	3	
GE AREA IV	Humanities	Elective		3
PHYS EDUC	Ph. Ed. 23-24	Advanced Physical Education	1	1
			16	16
		JUNIOR		
MAJOR	T/RS	Electives	6	6
COGNATE	Electives	Electives	3	3
GE AREA II	Social/Behavior	Elective	3	
GE AREA IV	Humanities	Electives	6	3
GE AREA V	Phil. 110	Philosophy of Human Conduct		3
			18	15
		SENIOR		
MAJOR	T/RS	Electives	3	3
COGNATE	Electives	Electives	3	3
GE AREA IV	Humanities	Electives	3	3
GE AREA V	Philosophy	Philosophy Electives	3	3
GE FREE	Electives	Electives	3	3
			15	15

TOTAL: 127 credits

T/RS 136
Spirituality of Vatican II 3 credits
An interpretation of the theology of the Christian life (some basic principles applicable to all Christians and their application to some particular Christian vocations) in the light of explicit and implicit teaching of Vatican II.

T/RS 137
Jesus: God and Man 3 credits
Modern reflections on the Biblical data about Jesus, and the theology about Christ as found in the Fathers, the Church Councils, and theologians Catholic and Protestant.

T/RS 140
Jewish Theological Thought 3 credits
The nature, creeds, and institution of Judaism. The God Concept, Man and His Will, the Nature of the Good, the Destiny of Man, the Shadow of Sin.

T/RS 141
The Protestant Faith 3 credits
An inquiry into the way a Protestant thinks theologically. Problems of myth, truth, authority arising from modern Biblical Criticism. Roots and principles of Protestant thought on the doctine of God, nature of the Church, Christology, Eschatology, and Ethics.

T/RS 150
Church and Contemporary Social Issues 3 credits
An introduction to contemporary religious thinking on the major social issues of the present day. Man, morality and the absurd, religion and race, sex, family, and the politico-economic order; the Church and the international order.

T/RS 151
Political Man: A Christian Perspective 3 credits
An inquiry into the role of man in the state from the perspective of a Christian anthropology. Discusses specific issues such as selective conscientious objection and nonresistance which have a particularly Christian motivation. Places such discussions in the context of larger principles.

T/RS 152
Jesus and Marx: A Dialogue 3 credits
A study of the doctrine of man—his existence, purpose and destiny—as perceived in the writings of Marx and the message of Jesus.

T/RS 170
Theology of Love and Marriage 3 credits
Natural and supernatural meaning of love. The theology of vocation, the secular meaning, sign and celebration of Christian matrimony, and the implications for Christian perfection in the calling to marriage and family life.

T/RS 171
Theology of Sexuality 3 credits
The nature and meaning of sexuality. The scriptural and Patristic sources. Contemporary insights into sexuality as a quality of the human person. A theology of sexuality with its moral and attitudinal implications for the pre-marital, marital and celibate states.

T/RS 177
Theology and the Life Sciences 3 credits
Theological values in human life; divine plan in the natural environment. Problems posed to theology in ecology, population growth, abortion, sterilization, euthanasia, genetic technology, insemination, organ transplants, sex transformation, character change through drugs, etc.

T/RS 180
Introduction to Biblical Exegesis I 3 credits
The individuals, history and literature of the Old Testament, with special emphasis on ancient Near East environment, and the relation of this literature to the biblical books.

T/RS 181
Introduction to Biblical Exegesis II 3 credits
An examination of the discipline of Old Testament theology. Critical and exegetical study of selected writings in the Bible. Biblical criticism.

PRE-LAW PROGRAMS

The University is justly proud of its tradition in the field of law. Fully fifty percent of the region's lawyers have done their undergraduate pre-law studies at the University.

Today, with a Jesuit labor lawyer as its President and a Federal District Judge as chairman of its Board of Trustees, the University continues in its determination to prepare students for the law schools from which they will eventually profoundly affect their society.

The strength of the University's liberal education approach to its pre-law programs is indicated by the record of success its graduates have had in winning admittance to the nation's leading law schools. Graduates of the last two senior classes have been admitted to Georgetown and Harvard Law Schools, both of which annually lead all American law schools in admissions selectivity with over 5000 applications each. University graduates during this same period were admitted to such other law schools as NYU, Boston College, Villanova, Catholic University of America, Temple, Case-Western Reserve, St. Louis, Dickinson, and a dozen other public and private law schools from California to New England.

Federal District Judge, Hon. William J. Nealon, Chairman, Board of Trustees

Pre-Law Curriculum — For admission to law school, no specific undergraduate major is required. In the last senior class, history was the most frequent major among seniors admitted to law school, followed by English, political science, accounting and business administration. In the year previous to this, seniors majoring in philosophy, chemistry, physics and psychology were also admitted to law schools. The single most important factor in admission is not therefore a specific major, but rather the degree of academic excellence manifested by the student in pursuing whatever major he has chosen for his particular field of competence.

Skills and Courses — The second most important factor in admission to law school is the student's record of achievement in the Law School Admission Test (LSAT). The General Education program of the University is designed to enable pre-law students to acquire these skills:

1. Comprehension and Proficiency in Oral and Written Communication:

   The University's freshman courses in Oral Communication (Engl. 2) and the Writing Center (Engl. 4 or 7) provide a foundation; pre-law students who complete these courses or whose high school record has exempted them, might then take the following courses offered by the faculty:

   Engl. 114 — Debate and Discussion
   Phil. 148 — Philosophy of Communication

   The student should also consider participating in the Noel Chabanel Debate Society; the college newspaper; the yearbook; and the various departmental literary journals.

II. A Critical Understanding of Human Institutions and Values:

Here the University's courses in the field of history and literature, philosophy and theology are most helpful. The New Curriculum allows students to use courses of interest as cognates to their major program and as part of the humanities area in the General Education program. British and American Constitutional History (Hist. 122-123, 142-143) are especially recommended.

III. Creative Power in Thinking:

Legal studies and legal work demand the ability to think clearly, carefully, and independently. It is important therefore that pre-law students cultivate skills in research, logic and critical analysis. Especially recommended are:

Philosophy 28 — Logic: the Art of Communication
Philosophy 107 — Philosophy of Law
English 113 — Logic and Rhetorical Analysis
Business 13-15 — Business Law

Similarly, quantitative skills are needed. The General Education program allows each student the opportunity for some background in the natural and quantitative or social sciences. Especially recommended as electives or cognates to the major program are:

Business 1-2 — Elementary Accounting
Pol. Sci. 133 — Political Science Statistics

Pre-Law Advisor—Continuing advice on course selection and on procedures for application to law school can be obtained from the Pre-Law Advisor, Dr. F. X. J. Homer. All pre-law students are urged to consult frequently with him.

Pre-Law Society — This student association is organized to familiarize those interested in the law as a career with the manifold aspects of the legal profession. Guest speakers, including judges, lawyers, law students and representatives of various law schools, meet with members of the Society throughout the year. The Pre-Law Society sponsors the Annual Law Day Dinner held during the first week of May.

Dr. Frank Homer, Department of History, Pre-Law Advisor

PRE-MEDICAL PROGRAMS

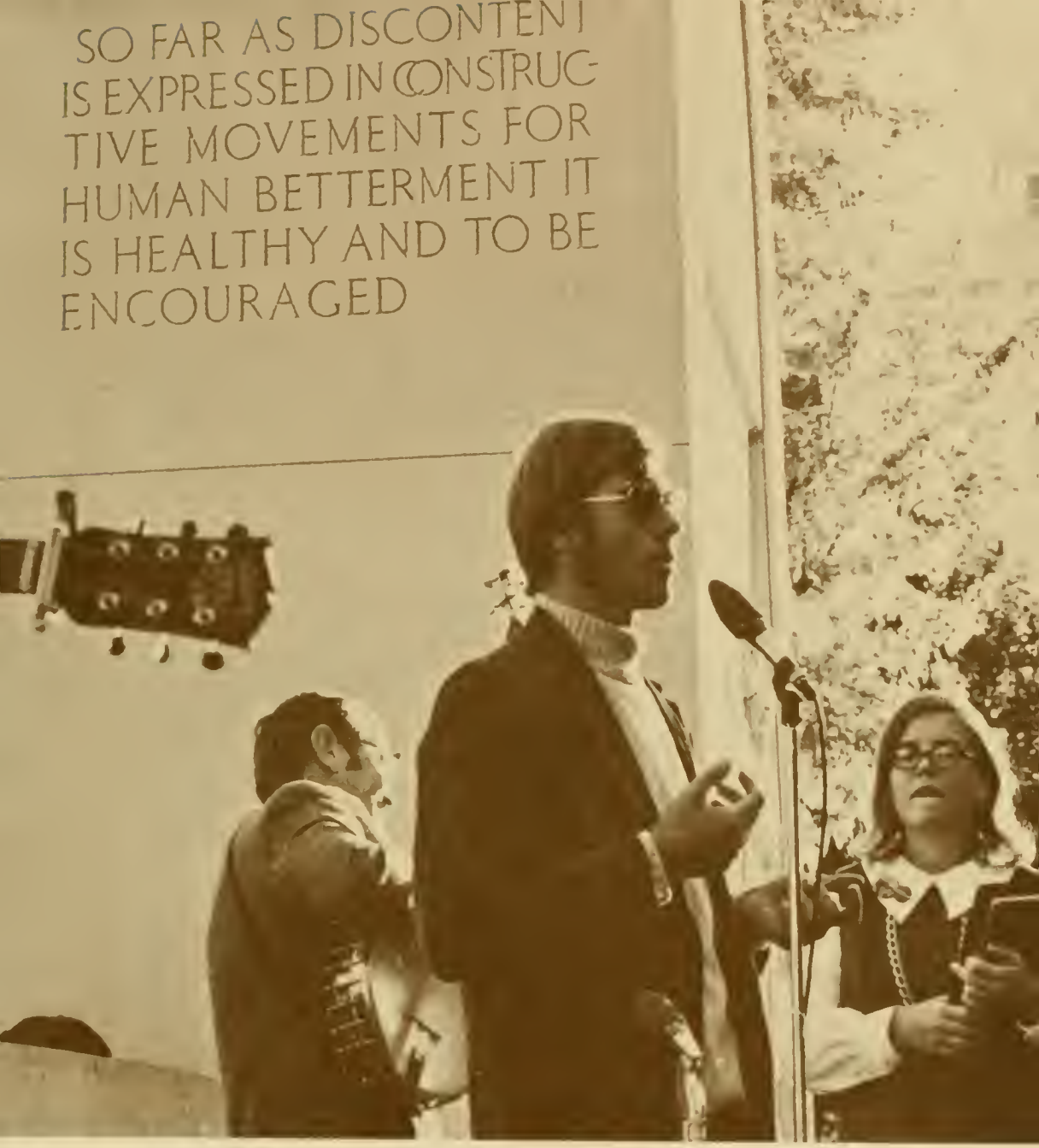
The success of the University's pre-medical program has been outstanding. Notwithstanding the fact that 1972 was the most competitive year in the history of American medical school admissions, the University of Scranton placed among the top ten percent of American liberal arts colleges in the proportion of its graduates accepted into medical school for that year. In addition, a half-dozen other students were admitted to Dental Schools or Schools of Osteopathic Medicine and Surgery.

University of Scranton students received over forty acceptances to medical or dental schools last year, including many of the most prestigious in the country: Georgetown, Columbia, Rutgers, George Washington, Hershey, Creighton, Jefferson, Hahnemann and Temple.

Pre-Medical Curriculum — Most pre-medical students major in biology. The biology curriculum should be consulted for the specifics of the basic pre-medical program. Students majoring in chemistry or psychology at the University are also regularly admitted to medical or dental schools.

The new majors in biochemistry and medical technology are also important in that they provide alternative majors in second, third or fourth year for those pre-medical students whose academic work will not qualify them for medical school.

Pre-Medical Advisor — The University's Pre-Medical Advisor is Dr. Joseph Evans, chairman of the department of biology. He may be consulted for more details about the University's pre-medical program.



OUTSIDE THE CLASSROOM

OUTSIDE THE CLASSROOM

As any high school graduate knows, much of a student's education takes place outside the classroom. This is true also at the University level. At the University of Scranton, much of the formal academic learning process takes place off the campus in the various internship programs as well as on the campus in traditional extracurricular activities. In many instances, these activities merit and receive academic credit.

DRAMATICS

The tradition of the theatre and dramatics in Jesuit colleges goes back four hundred years. In Scranton this tradition thrives. With increasing frequency, students are writing and staging their own dramatic productions, often for academic credit in English or Communication Arts, or in place of the traditional course term paper. In recent months, students have written and directed such original productions as *White Buffalo,* which dealt with the theme of student protest, and *Then Sounds the Trumpet,* a historical drama about the 1944 assassination attempt on Hitler and which merited for its student authors the National Catholic Theater Conference Medal. Students have also directed adaptations of Peter Ustinov's *Beyond* and Shaw's *St. Joan.* This past year, a freshman student composed a musical adaptation of Shaw's *Overruled.* Through the Communications department at Marywood College, other Scranton students have earned academic credit through summer theatre performances in the Pocono Mountain resort area.

Beyond these individual efforts, THE UNIVERSITY PLAYERS each year present several dramatic productions and participate in the annual One-Act Play Contest for Jesuit Colleges. Recent productions of the Players include John Osborne's *Look Back in Anger* and Peter Schaffer's *Black Comedy.* In 1970-71, the Players were honored with the University's Best Club of the Year Award.

ROYALS' HISTORICAL SOCIETY

Recipient of the Best Club of the Year Award in 1969-70, this association of students and faculty is devoted to enhancing the study of history outside the classroom. Recent activities included field trips to wineries in the Finger Lakes region, to the Corning Glass Museum, and to New York City museums. Additionally, the club brings diplomatic visitors to the campus as well as travelling to consulates in New York City, Washington and to the United Nations. The club also publishes *Retrospect,* a journal of student and faculty essays in the historical field.

PEOPLE HELP PEOPLE

People Help People is a voluntary student organization formed by students to help alleviate community problems in Lackawanna County. Students participate in programs for tutoring in local areas, helping the mentally retarded or mentally disturbed and aid in recreational activities. Recipient of the Best Club of the Year Award in 1968-69 and a Special Service Award in 1967-68.

DEBATE

The tradition of debate in Jesuit colleges and high schools is also strong at the University of Scranton. The Noel Chabanel Council of Debate is a forensics union open to all students interested in inter-collegiate varsity and junior varsity competition in debate and speech. In recent years the Council of Debate has been especially active in inter-collegiate varsity debate, winning several national invitational tournaments as well as consistently placing among the top schools in the Middle Atlantic States region. Awards have been won by the Council in such diverse points as Chicago, New Orleans, and Providence, R. I. The University's Best Club of Year in 1967-68.

FATIMA PROJECT

This student organization has taken a special interest in the children of a Northeastern Pennsylvania home for orphans. Children at the institution are treated to weekly activities, parties, plays, motion pictures, trips and outings. The Project received the Best Club of the Year Award in 1966-67.

PUBLICATIONS

The University offers a wide choice of journalism opportunities. The *Aquinas* is the campus newspaper and positions are available to members of all classes. The *Esprit* presents the student opinion of the campus in fine literary form. *Esprit* is the award-winning campus literary journal. History students have the opportunity to have their articles published in *Retrospect*. The yearbook, *Windhover*, is annually produced by the students. Political Science students publish *Cosmos*.

WILLIAM W. SCRANTON LECTURE SERIES

As part of an effort to bring leading political issues and personalities before the University community, the William W. Scranton Institute of Public Affairs has brought to the campus in recent years Senators Eugene McCarthy, Mark Hatfield, Abraham Ribicoff, and Charles Percy.

THE UNIVERSITY SINGERS

The Singers bring the musical voice of the University to other college campuses and high schools, as well as performing at campus events.

SWORDSMEN SODALITY

The oldest co-curricular organization, dealing with the spiritual welfare of the student body, is the Swordsmen Sodality. The demands of the organization are high, but through his participation, the student will be made vitally aware of his role in the life of the Mystical Body and prepared to lead a Catholic life in the contemporary world.

ATHLETICS

INTERCOLLEGIATE SPORTS

The University is a member of the National Collegiate Athletic Association; the Eastern Collegiate Athletic Association; the Middle Atlantic Conference and the Middle Eastern College Athletic Association. A complete program of intercollegiate sports is directed by the University Athletic Department.

Basketball	Cross Country
Baseball	Golf
Tennis	Soccer
Wrestling	Rifle Team

CLUB FOOTBALL

A very active Club Football team also exists at the University of Scranton. Scheduled are games with such schools as Canisius, St. Francis, Steubenville, Kings, Patterson State and St. Vincent.

INTRAMURALS

A year-long intramural program is in operation both in the John J. Long Center and outdoors.

25%

STUDENT SERVICES

STUDENT PERSONNEL — THE DIRECTOR in cooperation with his staff members directs the various student services, plans and coordinates all activities and services in non-instructional areas: e.g. housing, health, activities, food services, religious services, placement. THE DEAN OF MEN has a special responsibility for assisting students in the Residence Halls and providing assistance in the areas of student conduct.

CHAPLAIN — A characteristic of Jesuit education is the Chaplain. He and his assistant direct the spiritual activities of the University and its various religious organizations. He is, in a special sense, the student's advisor in religious matters and personal concerns.

CAMPUS MINISTRY — In conjunction with the chaplain, a team of Jesuit and diocesan priests also support and serve the University community through the proclamation of the Gospel, the celebration of the liturgy and specific contributions to the intellectual life. Recent seminars sponsored by the Campus Ministry team include a student-faculty series on the problem of Belief and Unbelief in the contemporary world as well as an interdisciplinary seminar on Irenology — the study of world justice and peace.

COUNSELING CENTER — Staffed by professionally trained personnel, this department serves the students, the Chaplain, the faculty and the administration. It provides counseling service on educational, vocational and personal matters. Students are tested and counseled on their aptitude for college work, study habits, their correct placement in the curriculum, and their reading techniques.

The center would have the student ask himself: "Now that I'm in college, where do I go? Do I really understand my choice of major? What other majors are open to me?" The Center can help answer these questions. It is located in Room 401 of St. Thomas Hall. Mr. Cannon and Mr. Beckish are readily available to counsel any student with educational or personal problems. Interviews are on a voluntary basis and may be arranged through the Center's secretary, Mrs. Ryan. There is no charge for this service which is covered by your University fee.

ALUMNI ASSOCIATION — Typical of a school which is virtually youngest among the Jesuit universities of the world, is the coordination of young and old members of the University community in the Alumni Society. Mr. Edward Mitchell '68 was recently elected President of the National Alumni Society, while Dr. Frank O'Hara '25 serves as Moderator. Alumni officers speak at various student functions from freshman orientation to commencement ceremonies inducting students into the Society four years later. Together the 11,000 Alumni of the University have raised over $3,000,000 in the Annual Giving Campaign since 1955.

Dr. Frank O'Hara, '25, and Mr. Ed Mitchell, '68 Moderator and President of the Alumni Society of the University of Scranton

READING CLINIC — To assist students in correcting reading weaknesses and improving proper skills, the University's Reading Clinic is made available. A non-credit Developmental Reading course is offered. It concentrates on such areas as comprehension, word attack, speed, critical reading and analysis, research and study techniques. There is a $50.00 fee.

ADVANCED STUDY ADVISORY OFFICE — This office exists to encourage and advise seniors seeking admission and/or financial aid to graduate and professional schools, to keep students posted on test deadlines, admission deadlines and other pertinent data, and to type letters of recommendation to graduate and professional schools. The Advanced Study Advisor also acts as campus representative for the Woodrow Wilson Foundation, the Danforth Foundation and the Fulbright Programs.

PLACEMENT BUREAU — Undergraduates and alumni are given every possible assistance in finding satisfactory employment when they register with the University Placement Bureau. Officers of large corporations arrange through the Bureau to visit the University to interview seniors for positions with their organizations.

GENERAL REGULATIONS

The College reserves the right to take appropriate disciplinary action in the case of any student who conducts himself contrary to the standards of the College. These standards are given clear expression in the Student Handbook of the College of Arts and Sciences.

Further information on dismissal and probation policy is also given in the Student Handbook and should be reviewed by new students.

Bernard R. McIlhenny, S.J., Director of Admissions, and James J. Moore, Admissions Counsellor

Admissions, Expenses, Financial Aid

ADMISSION

The Admissions Committee of the University of Scranton will make the final decision on applications for admission. In reaching this decision, the committee will consider the following:

The high school record—both the student's relative standing in class and the program followed.

The scholastic aptitude test scores.

The recommendations of teachers, guidance counselors, and the principal.

The student's character personality, and leadership potential.

Admissions standards and policy are free of discrimination on grounds of race, creed, color, and national origin.

STEPS IN MAKING APPLICATION

Requests for an application form and all correspondence dealing with admission to the College of Arts and Sciences should be directed to: THE DIRECTOR OF ADMISSIONS, UNIVERSITY OF SCRANTON, SCRANTON, PENNSYLVANIA 18510.

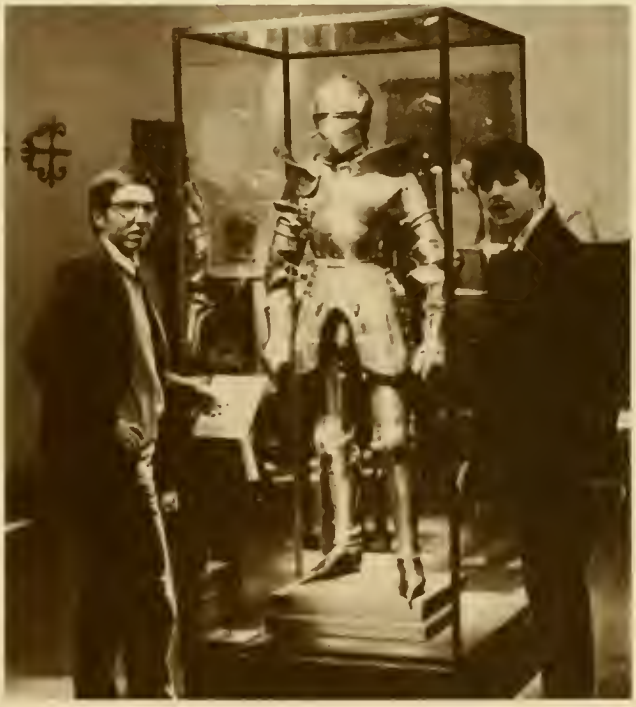
A non-refundable fee of $15.00 should accompany the application.

Students should apply during the first semester of their senior year of high school. July 1 is the final date on which applications for Fall term admission will be accepted.

The first two parts of the application form should be completed and the entire form given to the registrar or principal of the high school who will record the high school grades and return the form with his recommendations to the University.

In December or January of senior year, the student should take the Scholastic Aptitude Tests. The Achievement Tests in English, Mathematics Level I, and the Modern Foreign Language studied in high school should be taken in January or March of senior year. Applicants for science or engineering programs or those with advanced mathematics courses will take Mathematics Tests, Level II. The Scholastic Aptitude Tests and the Achievement Tests are required of all applicants. The Aptitude Tests are used for admission and the Achievement Tests are used for placement. Arrange for these tests one month ahead of the testing date by writing to: The College Entrance Examination Board, Box 592, Princeton, New Jersey 08540.

A non-refundable class reservation fee of $25.00 is required of all accepted applicants. In addition, accepted resident freshmen will make a non-refundable room deposit of $50.00 upon notice from the Director of Admissions.



Students may make use of a pre-college counseling service offered by the Director of Admissions after an application has been submitted.

Final marks for senior year and certification of graduation are necessary. Students should arrange to have these sent to the Director of Admissions on the completion of senior year in high school.

REQUIRED HIGH SCHOOL PREPARATION

Students desiring to enroll in any of several undergraduate programs offered by the University must have completed a total of 16 or more high school academic units covering grades 9-12. The term "unit" means a high school course taught four or five hours weekly throughout an academic year of 36 weeks duration. Unit requirements and preferred distribution of secondary courses are given in the following table:

HIGH SCHOOL UNITS	COLLEGE PROGRAM CHOICE					
	Arts		Science or Engineering		Business Education or Social Science	
	Req.	*Pref.*	*Req.*	*Pref.*	*Req.*	*Pref.*
English	4	4	4	4	4	4
History & Social Science	2	3	2	3	2	3
Foreign Language	2	2+	2	2+	2	2+
College Preparatory Mathematics	3	4	3	4	3	4
Science	1	2+	1	3+	1	2+
Other acceptable units	4		4		4	
TOTAL	16+		16+		16+	

Applicants without high school credit in modern languages may be accepted if they present 16 acceptable units. A single year of language in high school will not be counted as a unit to satisfy the requirements for admission.

Mathematics includes elementary, intermediate, and advanced algebra, plane and solid geometry, trigonometry, analysis, and any other college preparatory courses. Applicants for science and engineering programs must include trigonometry and must have maintained an 85% average in each mathematics course.

Science includes biology, chemistry, physics, and other college preparatory courses. Pre-engineering applicants are urged to include physics in their high school preparation.

Other acceptable high school units may be chosen from any of the following:

Ancient History
Medieval History
Modern History
Civics
Economics
Problems of Democracy
Greek, Latin
Modern Foreign Language
College Preparatory Mathematics
Science

REQUIRED OF ALL APPLICANTS

WHAT	APPLY TO WHOM	WHEN
Application Form	Director of Admissions	End of junior year, start of senior year.
High School Record	Principal (to be sent to the Director of Admissions)	End of junior year, start of senior year.
Scholastic Aptitude Test	College Entrance Examination Board, Box 592, Princeton, New Jersey 08540	November, December, or January of senior year.
Achievement Tests in: English Mathematics Modern Foreign Language	College Entrance Examination Board, Box 592, Princeton, New Jersey 08540	January or March of senior year

Arrange to have all test scores sent to the Director of Admissions, University of Scranton.

Advanced Placement
Academic Development Program
Transfer Students

ACCELERATION AND ADVANCED PLACEMENT

Applicants who have taken college level courses may be given advanced placement or advanced placement with credit for these courses. Students who have been accepted for admission and desire to apply for such placement must take the Advanced Placement Examination offered in May by the College Entrance Examination Board, Princeton, New Jersey 08540. Ordinarily a score of "3" or better in this examination will insure advanced placement with credit.

SPECIAL ACCELERATION PROGRAM

A special acceleration program is available for outstanding high school students of the Scranton area. These students are recommended by their high school during their junior year and take courses at the University during the summer months and senior year. Through this program it is possible for a student to enter the University as a sophomore. For further details contact the Director of Admissions.

COLLEGE LEVEL EXAMINATION PROGRAM

Through the CLEP tests, applicants may gain college credit in most academic subjects for work done outside the classroom in jobs, military service, etc., or in nonaccredited institutions. For further information contact: College Level Examination Program, Box 1824, Princeton, New Jersey 08540. Students wishing to be considered for CLEP credits should take the CLEP examinations and have the results forwarded to the Director of Admissions.

ACADEMIC DEVELOPMENT PROGRAM

Applicants who fail to meet all of the admission requirements may be considered for a special freshman year Academic Development Program. This concentrates on English, logical thinking, reading skills, study habits, as well as work in the student's major field. Satisfactory completion of this program will insure the applicant normal sophomore standing.

TRANSFER STUDENTS

At the discretion of the Admissions Committee, students from another accredited college or junior college may be admitted provided: (1) The courses to be transferred are equivalent to courses offered at the University of Scranton; (2) the academic average of the candidate is "C plus" (2.5) or better; (3) certification of honorable dismissal is presented from the previous college. No credit will be given to courses with grades less than "C". Students transferring from other institutions shall be required to make up curricular subjects prescribed in the course which they are to follow at the University of Scranton. A minimum of 36 credits at the University of Scranton is required of transfer students for degree eligibility.

STUDENT EXPENSES

ACADEMIC YEAR 1972-73

The University of Scranton is one of the few universities in America which raised neither its tuition nor its room and board for the 1971-72 or 1972-73 academic year. The University is pledged to continue its effort to make available to as many as possible the benefits of quality, private education.

Tuition per credit ..... $ 49.00

SPECIAL SERVICE FEES

Late Registration Fee 15.00
Change of Schedule after Registration 5.00
Certified Transcript (per copy)
  Currently Matriculated Students 1.00
  All Other Requests 2.00

ORDINARY FEES

University Fee, per semester 45.00
  The University Fee is applied as follows:
    Student Center Membership Fee $15.00
    Physical Education Building Fee 15.00
    Athletic Fee 7.50
    Student Activity Fee 7.50
Science Laboratory, per course per semester 30.00
Science Demonstration Fee, per course per semester 10.00
Business Laboratory, per semester 10.00
Statistics Laboratory, per semester 10.00
Computer Use Fee, per semester 30.00
Education and Psychology Laboratory, per semester 20.00
Language Laboratory, per semester 10.00
Breakage Fees ..... Actual
I.D. Photo Fee 1.00

FOR SENIORS ONLY		FOR FRESHMEN ONLY	
Graduation Fee	45.00	Orientation Fee	15.00

FOR RESIDENT STUDENTS ONLY—ROOM & BOARD

(Consult page 17)

2 meal plan (per semester) 455.00
3 meal plan (per semester) 515.00
Damage Deposit 25.00

Incoming resident students are required to pay a $25.00 room damage fee. The room damage fee will be paid only once by each resident student and will be refunded in full (or in part if any claims are made against the fee) upon the student's graduation or official withdrawal from school.

Upperclassmen desiring to reserve space in one of the residence halls must make a room reservation deposit of $50.00 before June 14. This deposit is not refundable but is applicable to room and board. Fees listed

for residence facilities do not cover the times of calendar vacations. Students are expected to vacate their rooms at these times.

Tuition and fees are payable in advance upon registration. Registration is to be completed by mail by August 23 for the fall semester and by January 17 for the spring semester. There will be a $5.00 service charge made for students who register in person instead of by mail. After the dates of August 23 or January 17, respectively, the late registration fee of $15.00 becomes effective. Without exception, the Laboratory Fee must be paid in all courses having a laboratory requirement.

No student shall be permitted to receive any degree, certificate, or transcript of record, until his financial account with the University has been satisfactorily settled.

MONTHLY PAYMENTS

Parents who prefer to pay tuition, board and room, and other fees in equal monthly installments should consult their local bank. Numerous banks now provide tuition plan services. The University does not accept installment payments directly.

REFUNDS

When a student leaves the University without completing the semester, he may not demand a refund as a matter of right. If, however, his withdrawal is authorized for a good cause and he has honorable dismissal, he may request in writing a refund of tuition, board and room fees. Ordinary and special service fees are not refundable. The schedule of refunds is listed below.

PERIOD OF ATTENDANCE	REFUND
FIRST SEMESTER	
To September 13	80%
To September 20	60%
To September 27	40%
To October 4	20%
Beyond October 4	no refund
SECOND SEMESTER	
To February 7	80%
To February 14	60%
To February 21	40%
To February 28	20%
Beyond February 28	no refund

FINANCIAL ASSISTANCE

The University desires to help as many qualified students as possible to complete a college education. For this purpose the University maintains an Office of Financial Assistance and all inquiries concerning such assistance should be made to the Director of Financial Aid.

PROCEDURES FOR APPLYING FOR FINANCIAL AID

1. Complete the application for financial assistance which accompanies your application for admission and return it to the Director of Financial Aid before February 15th.
2. Complete the Parents' Confidential Statement and forward it to the College Scholarship Service before February 15th. The University code number is 2929. Copies of the Parents' Confidential Statement can be obtained from the College Scholarship Service, Box 176, Princeton, New Jersey 08540.

Ordinarily to be eligible for financial aid, a student must be classified as full time, i.e. carrying a minimum of 12 credits per semester. The following financial aid programs are available:

SCHOLARSHIPS:

Each year the University offers a variety of scholarships which range from full tuition Presidential Scholarships for outstanding high school seniors to partial scholarships which are granted on the basis of the student's scholastic ability and financial need. The University of Scranton participates in the College Scholarship Service and all applicants for scholarship aid must file a copy of the Parents' Confidential Statement.

LOANS:

The University administers the National Defense Student Loan Program in accordance with the National Defense Act of 1958. The Parents' Confidential Statement is required of all loan applicants.

Individual state loans are also available. Applications for these loans must be secured from the participating banks in the student's home town.

Pennsylvania residents may borrow up to $1500 a year from the State Guaranteed Student Loan Program of the Pennsylvania Higher Education Assistance Agency (PHEAA).

OTHER PROGRAMS:

THE PENNSYLVANIA HIGHER EDUCATION ASSISTANCE AGENCY has been designated by the General Assembly to administer the **State Scholarship Program.** A graduating high school senior may be awarded from $200-$1200 per year. Interested students should consult with their high school guidance counselor for full details and eligibility requirements.

EDUCATIONAL OPPORTUNITY GRANTS established under the Higher Education Act of 1965 are awarded from federal funds through the college in amounts from $200-$1,000 per year to students from low income families. The Parents' Confidential Statement is required for this program.

THE COLLEGE WORK-STUDY PROGRAM established under the Economic Opportunity Act of 1964 provides a number of jobs both on and off campus during the summer and academic year for students demonstrating a high degree of financial need. The Parents' Confidential Statement is required of all applicants for this program.

VETERANS READJUSTMENT ACT OF 1966—Veterans should consult with their local V.A. counselor in order to establish their eligibility for participation.

U.S. ARMY ROTC SCHOLARSHIPS are available. Full details may be secured by contacting the Military Science Department.

THE BUREAU OF VOCATIONAL REHABILITATION under the Pennsylvania Department of Labor and Industry provides help to qualified students. Eligibility requirements should be discussed with a local service office.

CAMPUS EMPLOYMENT—In addition to jobs under the Federal College Work-Study Program, the University annually provides a number of jobs in various departments and administrative offices for qualified students. Students seeking campus employment must file the Parents' Confidential Statement.

The University's Language Laboratories contain approximately forty stations equipped for independent work by the student or simultaneous instruction by the instructor. Shown here are seniors John Rock and Gerald Mulderig, Fulbright Fellows in German during 1972-73 at respectively, University of Mainz and University of Cologne in Germany, and Dr. Joseph Brunner, Professor of German and Director of several NDEA German Language Institutes held at the University in recent years.

PRESIDENTIAL SCHOLARSHIPS

The *Presidential Scholarships* have been made possible by University support through unrestricted funds and, in part, by unfunded gifts made to the University by generous benefactors. These gifts are utilized as direct grants. In recent years gifts have been made to the Bernard J. McGurl Memorial Scholarship Fund and to the John J. Dempsey III Memorial Scholarship Fund. In addition, a bequest of $1000 was given by Margaret M. Biglin. A scholarship for a pre-medical student in the amount of $200 was given for 1972-73 by Dr. Joseph T. Evans. The Purple Club of Scranton has annually contributed to these scholarships in significant amounts.

Several funded scholarships have been established:

THE MARTHA FITCH SCHOLARSHIP FUND—In 1955 a legacy of $313,266.14 was bequeathed to the University in the Will of Miss Martha Fitch for scholarships. The income from this fund, now in the amount of $406,720 is used to provide scholarships for needy and deserving students.

THE MURPHY SCHOLARSHIP FUND—This Fund was established in 1957 at the request of Miss Margaret Murphy, who left the gift as a legacy. A marker has been placed in the University designating the gift as having been made by herself and her sister Katherine "in loving memory of our mother, father and brothers." The income of this Fund, now in the amount of $58,190, is used to provide scholarships for needy and deserving students.

ROBERT I. EDELSOHN SCHOLARSHIP FUND—In 1964 the sum of $25,000 was bequeathed in the Estate of Robert I. Edelsohn to be held in trust by the University of Scranton and to be invested and reinvested and held as a perpetual fund, the income from which is to be applied to furnish scholarships to deserving students at the University of Scranton, who, without such assistance, might not be able to obtain the advantage of a college education.

BURKE FAMILY SCHOLARSHIPS—In 1966 and 1967, the sum of $50,000 was contributed to the Scholarship Endowment Fund of the University in the name of the Burke Family Foundation. In prior years, additional unfunded gifts had been made by the Burke Family Foundation. The income from the Fund is used to provide scholarships for needy and deserving students.

CHARLES E. MERRILL SCHOLARSHIPS — In 1969, the Charles E. Merrill Trust contributed $25,000 to the Scholarship Endowment Fund of the University. The income from this endowment is awarded for scholarship assistance to students of the Catholic faith.

JAMES I. KEARNEY SCHOLARSHIP FUND—This Fund was established in 1972 by a bequest in the amount of $15,975 in the Estate of James I. Kearney. The income from this Fund is to be used for scholarships for students, one or both of whose parents were or are parishioners of St. Ignatius Parish, Kingston, Pennsylvania.

PRESIDENTIAL SCHOLARS

For the period 1971-75, the University has named five Presidential Scholarships in honor of distinguished alumni, friends of the University, and citizens of the Scranton area.

The names of the scholarships and the recipients thereof are as follows:

THE MILTON ARONSOHN SCHOLARSHIP—to Mark E. Chopko, of Kingston, Pennsylvania.

THE JOSEPH F. GUNSTER SCHOLARSHIP—to John F. Burke, of Drexel Hill, Pennsylvania.

THE RICHARD F. GRADY, S.J., DEBATING SCHOLARSHIP—to Charles X. Gormally, of Rumson, New Jersey.

THE WILLIAM P. KEARNS SCHOLARSHIP—to Vincent Niedzielski, of Scranton, Pennsylvania.

THE JOSEPH J. WINEBURGH SCHOLARSHIP—to Michael C. Schlussel, of Southampton, Pennsylvania.

For the period 1972-76, the University has named the following Presidential Scholarships in honor of friends of the University.

The names of the scholarships and the recipients thereof are as follows:

THE REV. ALOYSIUS C. GALVIN, S.J., SCHOLARSHIP—to Thomas Donnelly, of Greenbelt, Maryland.

THE MRS. EDWARD J. LYNETT SCHOLARSHIP—to Mary Ann Lukas, of Kingston, Pennsylvania.

THE MOST REV. J. CARROLL McCORMICK, D.D., SCHOLARSHIP—to Gerard Walsh, of Forest City, Pennsylvania.

THE ROBERT L. McDEVITT SCHOLARSHIP—to Bernard-Dean F. Marucci, of Gibbstown, New Jersey.

THE HON. WILLIAM J. NEALON SCHOLARSHIP—to James F. Carney, of Ardsley, Pennsylvania.

THE NORMAN M. SCHNEIDER SCHOLARSHIP—undesignated until 1973-74

THE CATHERINE B. TIERNEY SCHOLARSHIP—undesignated until 1973-74

OTHER FUNDED ENDOWMENTS

JOHN J. LONG, S.J., FUND—Contributions to this Fund have been made by friends of the Very Rev. John J. Long, S.J., President of the University 1953-63, on the occasion of his Golden Jubilee in the Society of Jesus and later as a memorial after his death in 1971. The Fund, in the amount of $20,119, is invested and the income therefrom is used for projects and programs concerned with the spiritual growth of students.

RUTH H. GUNSTER MEMORIAL FUND—In 1971, Joseph F. Gunster established the Ruth H. Gunster Memorial Fund in loving memory of his wife. This fund, in the amount of $61,037.50, is invested and the income is used for scholarships or other purposes for the University, excluding capital building.

LACKAWANNA MEDICAL SOCIETY LOAN FUND—This Fund was established in 1966. A series of gifts from the Lackawanna Medical Society in the amount of $7,638 has been received and is invested, the income therefrom to be used to provide loans for worthy students in premedical and paramedical fields.

AWARDS

DR. A. J. CAWLEY AWARD—In memory of Dr. A. J. Cawley of Pittston, Pa., a Fund was established by a legacy from his sister, Miss Ellen Cawley. The income therefrom is used to provide an award to a Physics Major each year in the amount of $100.

JOSEPH P. HARPER AWARD—In memory of Professor Joseph P. Harper, Professor of Physics, 1936-1967, a Fund was established in 1967. An annual award in the amount of $100 is given to a senior student majoring in Physics, upon the recommendation of the Physics Department and with the approval of the Director of Financial Aid. In making this Award, the Department of Physics presents to the student a citation reminding him of the high scholarly ideals, exemplary life, and dedicated service represented by Professor Harper.

The benefactors of the University are perpetually remembered in the Masses and prayers of the Jesuit Community at the University.

The contributed services of the members of the Jesuit Community have totalled approximately $2,500,000 since 1942. This gift has enabled the University to offer many scholarships and has substantially aided in the building program.

Joseph A. Rock, S.J., Academic Vice President, Master of Haley Hall

faculty directory

BOARD OF TRUSTEES

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Edward J. Gerrity, Jr.
Dexter L. Hanley
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George V. Lynett
William J. Nealon
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Francis M. O'Connor
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William L. Reilly
George D. Ruggieri
Mrs. William W. Scranton
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William J. Young

OFFICERS OF THE UNIVERSITY CORPORATION

Dexter L. Hanley, *President*
Joseph A. Rock, *Secretary*
Louis C. Kleff, *Treasurer*

FACULTY

ADMINISTRATION AND PROFESSIONAL SERVICES

Dexter L. Hanley, S.J. (1970)
President of the University (1970)
A.B., LL.B., Georgetown University;
Ph.L., S.T.L., Woodstock College;
LL.M., Doctoral Studies,
Harvard University

John J. Baldi, D. Et U. *(1948)
Director of University Research (1964)
Professor of Sociology (1968)
A.B., M.S.S.W., Boston College;
Advanced Curriculum Certificate,
University of Pennsylvania

Charles J. Buckley, D. Et U. (1947)
Dean of the Evening College (1963)
Associate Professor of
Business Administration (1968)
B.S., University of Scranton;
M.B.A., Doctoral Studies
New York University

Robert J. Burke (1961)
Director of Placement (1963)
B.S., University of Scranton

Joseph M. Cannon (1959)
Director of Counseling Center (1968
Associate Professor of
Psychology (1968)
B.S., University of Scranton;
M.Ed., Cand. D.Ed., Pennsylvania
State University; Certified
Psychologist

William J. Cavey, S.J. (1954-1957; 1966)
Physical Plant Administrator (1966)
A.B., Loyola University, Chicago;
Ph.L., West Baden College;
S.T.L., Woodstock College

Marilyn Coar (1948)
Executive Assistant to President (1971
A.B. Rosemont

*Pro Deo et Universitate Award for twenty years of service.

Michael M. Costello (1972)
News Director (1972)
B.S., University of Scranton;
M.A., Ohio University

John J. Fitzpatrick, S.J. (1965)
University Chaplain (1966)
A.B., M.A., S.T.B., Woodstock College;
M.S., University of Scranton

John R. Gavigan, D. Et U. (1950)
Director of Student Personnel (1972)
A.B., University of Scranton

Louis C. Kleff, S.J. (1953)
Treasurer (1957)
A.B., M.A., Woodstock College

Zim E. Lawhon (1964)
Colonel, U.S. Army - Ret.
Registrar (1970)
A.B., M.S., Princeton University

Peter W. McCourt (1972)
Admissions Counselor (1972)
B.S., M.S., University of Scranton

Thomas A. McGoff (1964)
Director of Public Relations and
Development (1972)
B.S., University of Scranton

Bernard R. McIlhenny, S.J. (1966)
Director of Admissions (1966)
A.B., M.A., Loyola University, Chicago;
S.T.B., Woodstock College

James J. Moore (1971)
Admissions Counselor (1971)
B.S., University of Scranton

Lawrence J. Morton (1969)
Dean of Men (1969)
A.B., St. Bonaventure University
M.S., Syracuse University

David R. Ocorr (1968)
Director of Athletics (1968),
Professor (1971)
Chairman Department of
Physical Education (1968)
A.B., University of Rochester;
M.S., Columbia University

Frank J. O'Hara, D. Et U. (1925)
Moderator, Alumni Society (1970)
A.B., LL.D., University of Scranton;
M.A., LaSalle College

William J. Parente (1970)
Dean of the College of Arts
and Sciences (1970)
Associate Professor of
Political Science (1970)
A.B., Xavier University; Ph.D.,
Georgetown University

J. Frank Reddington, D. Et U. (1940)
College Physician (1940)
A.B., Holy Cross College;
M.D., Georgetown University

Joseph A. Rock, S.J. (1946-47; 1957)
Academic Vice President (1966)
Professor of History (1969)
A.B., M.A., Georgetown University;
Ph.L., Woodstock College;
S.T.L., Weston College;
Ph.D., Georgetown University

Robert T. Ryder, D. Et U. (1946)
Assistant Treasurer (1969)
B.S., M.B.A., University of Scranton

John K. Stout (1966)
Assistant Director of
Rehabilitation Counseling (1966)
B.S., M.S., D.Ed.,
Pennsylvania State University

Harry B. Strickland (1963)
Dean of the Graduate School (1969)
Associate Professor of
Business Administration (1968)
B.S., St. Vincent's College;
M.L., Ph.D., University
of Pittsburgh

Joseph A. Szuhay (1964)
Director of Rehabilitation
Counseling (1964)
B.S., M.S., Ph.D.,
State University of Iowa

Joseph M. Tierney (1964)
Director of Student Financial Aid
(1964); A.B., University of Scranton

Leonard N. Wolf, D. Et U. (1937)
Vice President for Planning (1969)
Professor of Biology (1940)
B.S., St. Vincent's College;
M.S., Ph.D., University of Pittsburgh;
Sc.D., St. Vincent's College

FACULTY
Instruction

PROFESSORS EMERITI

Richard F. Grady, S.J., Ph.D., D. Et U. (1942-1970)
Department of English

Antanas Kucas, Ph.D., D. Et U. (1947-1967); Department of Modern Languages

Lawrence A. Mann, M.A., D. Et U. (1949-1972); Department of Classical Languages

John P. McNicholas, S.J., Ph.D. (1953-1969); Department of Philosophy

Thomas G. Sheehan, M.A., D. Et U. (1947-1967)
Department of Business Administration

PROFESSORS

Martin D. Appleton (1955)
Professor of Chemistry (1964)
B.S., University of Scranton;
M.S., Ph.D., Pennsylvania State University

Edward F. Bartley, D. Et U. (1943)
Professor of Mathematics (1968)
A.B., University of Scranton;
M.A., Doctoral Studies,
Columbia University

Joseph G. Brunner (1962)
Professor of Modern Languages (1969)
M.A., B. Eotvos College,
Budapest, Hungary; Ph.D.,
University of Budapest, Hungary

Umbay H. Burti, D. Et U. (1935)
Professor (1970), Chairman Department of Chemistry (1950-69; 1969; 1972);
B.S., LL.D., University of Scranton

John J. Callaghan (1955)
Professor of Biology (1972)
B.S., M.S., University College, Cork,
National University of Ireland;
Ph.D. Pennsylvania State University

Paul J. Casey, S.J. (1955)
Professor of Chemistry (1972)
Director of Computer Center (1965);
B.S., Spring Hill College;
S.T.B., Woodstock College;
M.S., University of Detroit

Frank A. Cimini, D. Et U. (1941)
Professor (1972), Chairman,
Department of Foreign Languages and Fine Arts (1953-1970; 1970);
A.B., University of Scranton;
M.A., Fordham University;
Doctoral Studies, St. John's University

James J. Conlin, S.J. (1967)
Professor (1970), Acting Chairman
Department of Sociology (1970);
A.B., Ph.L., M.A., Ph.D.,
St. Louis University; S.T.L.,
Woodstock College

William J. Devlin, S.J. (1960)
Professor of Philosophy (1960)
A.B., M.A., Ph.L., St. Louis University;
S.T.L. Woodstock College;
Doctoral Studies, Fordham University

Joseph C. Dougherty (1967)
Professor of History (1967)
A.B., St. Charles College;
M.A., Ph.D., Georgetown University

John L. Earl, III (1964)
Professor of History (1972)
B.S., M.A., Villanova University;
Ph.D., Georgetown University

Joseph T. Evans (1953)
Professor (1965), Chairman
Department of Biology (1969; 1972);
B.S., University of Scranton;
M.S., Ph.D., The Catholic University of America

Matthew J. Fairbanks (1960)
Professor (1970), Chairman
Department of Philosophy (1970);
B.S., M.A., Loyola University, Chicago;
Ph.D., Notre Dame University

Eugene B. Gallagher, S.J. (1959)
Professor of Theology (1959)
A.B., Ph.L., M.A., S.T.L.,
Doctoral Studies, Woodstock College

Edward Gannon, S.J. (1964)
Professor of Philosophy (1964)
A.B., Georgetown University;
M.A., Fordham University;
Ph.L., S.T.L., Woodstock College;
Ph.D., University of Louvain

Thomas M. Garrett (1960)
Professor of Philosophy (1970)
A.B., M.A., Ph.L., Gonzaga University;
S.T.L., Weston College;
Ph.D., Gregorian University, Rome

A. John Giunta (1960)
Professor of Business Administration
(1967) B.S., Harpur College;
M.S., Ph.D., Syracuse University

Walter Haab (1960)
Professor of Chemistry (1968)
B.S., Swiss Federal Institute of
Technology; M.S., University of
Alberta; Ph.D., University of
California

Maurice I. Hart, Jr. (1963)
Professor of Chemistry (1971)
A.B. Maryknoll College; M.S.,
Ph.D., Fordham University

William B. Hill, S.J., (1946-47; 1969)
Professor of English (1969)
Editor of *Best Sellers*
A.B., Georgetown University; Ph.L.,
Woodstock College; S.T.L., Weston
College; M.A., Ph.D., Fordham
University

Daniel J. Houlihan, D. Et U. (1947)
Professor of Business Administration
(1969); B.S., University of Scranton;
M.S., Columbia University;
J.D., Temple University

Lawrence J. Lennon, D. Et U. (1947)
Professor (1955), Chairman Department
of Education (1947-69; 1969; 1972);
A.B., M.S., Ph.D., Pennsylvania State
University; Certified Psychologist

Michael Marino (1965)
Professor of Education (1970)
B.S., M.S., Brockport State College;
Ed.D., University of Buffalo

Eugene A. McGinnis, D. Et U. (1948)
Professor (1963), Chairman
Department of Physics (1967; 1970)
B.S., University of Scranton;
M.S., New York University;
Ph.D., Fordham University

John P. McLean, D. Et U. (1940)
Professor of Business Administration
(1972); B.S., University of Scranton

Louis D. Mitchell (1961)*
Professor of English (1972)
A.B., M.A., Fordham University;
Ph.D., New York University

* On leave, 1972-73.

John J. Murray (1957)
Professor of English (1968)
B.S., University of Scranton;
M.A., The Catholic University of
America; Ph.D., New York University

Richard H. Passon (1964)
Professor (1972), Chairman
Department of English (1970);
A.B., King's College;
M.A., Ph.D., University of Notre Dame

Andrew W. Plonsky, D. Et U. (1947)
Professor (1947), Director
of Computer Science (1972);
B.S., University of Scranton;
B.S.E.E., M.S.E.E., Massachusetts
Institute of Technology; Registered
Professional Engineer in Pennsylvania

Stephen P. Ryan (1960)
Professor of English (1960)
A.B., St. Joseph's College;
M.A., University of Pennsylvania;
M.A., Ph.D., University College,
Dublin, National University of
Ireland

Henry V. Sattler, C.SS.R. (1967)
Professor of Theology (1967)
M.A., Ph.D., The Catholic University
of America

Herman L. Senker, D. Et U. (1946)
Professor of Business Administration
(1946); B.S. in C., Manhattan
College; M.B.A., Harvard University;
D.C.S., New York University

Gokaran Nath Srivastava (1967)
Professor of Physics (1967)
A.B., M.A., University of Lucknow,
India; Ph.D., University of
Toronto, Canada

Nicholas Terzopoulos (1972)
Lt. Colonel, U.S. Army
Professor of Military Science (1972)
B.S., Duquesne University;
M.A., University of Pennsylvania

Charles B. Trundle, S.J., D. Et U.
(1948-51; 1953); Professor of
Theology (1961); A.B., M.A.,
Georgetown University; Ph.L.,
Woodstock College; S.T.L.,
Weston College

Joseph R. Zandarski, D. Et U. (1951)
Professor (1971), Chairman
Department of Business Administration
(1969; 1972); B.S., University of
Scranton; M.B.A., New York University;
Ph.D., University of Pittsburgh

ASSOCIATE PROFESSORS

Paul R. Beining, S.J. (1949-51; 1967)
Associate Professor of Biology (1967)
B.S., Ph.L., Spring Hill College;
S.T.L., Woodstock College; M.S.,
Ph.D., The Catholic University
of America

Frank C. Brown, D. Et U. (1939)
Associate Professor of History (1954)
A.B., University of Scranton;
M.A., Doctoral Studies, Columbia
University

Edward J. Capestany (1968)*
Associate Professor of Philosophy
(1968); B.S., M.A., University of
Comillas, Spain; Ph.D., University
of Ottawa

Joseph B. Cullather, D. Et U. (1946)
Associate Professor of English
(1960); A.B., University of Scranton;
M.A., University of Alabama

James J. Cunningham (1968)
Associate Professor of Education (1971)
A. B., King's College; Ed.M., Ed.D.,
Rutgers University; Certified
Psychologist

Michael D. DeMichele (1967)
Associate Professor of History (1970)
B.S., University of Scranton; M.A.,
Ph.D., Pennsylvania State University

John J. Dunstone (1966)
Associate Professor of Psychology
(1969), Chairman Department of
Psychology (1972); B.S., Pennsylvania
State University; M.S., Ph.D., University
of Massachusetts

Matthew C. Farrell (1967)
Associate Professor of Education
(1972); A.B., M.S., University of
Scranton; Ph.D., Fordham University

John Quentin Feller (1969)
Associate Professor of History (1972);
A.B., Loyola College; M.A., Ph.D., The
Catholic University of America

* On leave, 1972-73.

Paul R. Getts (1968)
Associate Professor of Education
(1968); B.S., M.Ed., D.Ed.,
Pennsylvania State University

Edward A. Jarvis, S.J. (1956)*
Associate Professor of Philosophy
(1966); A.B., M.A., Ph.L., S.T.L.,
Woodstock College

John R. Kalafut (1965)
Associate Professor of Physics (1969)
B.S., University of Scranton;
M.S., Doctoral Studies,
University of Delaware

Helen P. Kelley (1959)
Associate Professor (1972)
Assistant Librarian (1959)
A.B., M.S. in L.S., Marywood College

Francis J. MacEntee, S.J. (1965)
Associate Professor of Biology (1965)
B.S., Spring Hill College;
M.S., Ph.D., The Catholic University
of America

John M. McInerney (1966)
Associate Professor of English
(1971); A.B. Le Moyne College; M.A.,
Ph.D., Loyola University, Chicago

Marianne McTighe, D. Et U. (1946)
Associate Professor (1970)
Librarian (1956), B.S., M. A.,
Marywood College

Mildred A. Norton, D. Et U. (1946)
Associate Professor (1972)
Assistant Librarian (1946)
B.S., M.S. in L.S., Marywood College

John J. O'Malley (1968)
Associate Professor of Psychology
(1971); B.S., University of Scranton;
M.S., Ph.D., Ohio University

William H. Osterle, S.J. (1956)
Associate Professor (1969), Chairman
Department of Theology (1969; 1972)
A.B., Loyola University of Chicago;
Ph.L., West Baden College;
M.S. in L.S., Western Reserve University;
S.T.B., Woodstock College;
M.A., University of Notre Dame

Matthew R. O'Rourke (1955)
Associate Professor of English (1968)
A.B., M.A., Rutgers University

Njegos Petrovic (1967)
Associate Professor of Modern Languages (1967) A.B., Classical College, Belgrade, Yugoslavia; M.A., Ph.D., University of Montreal

Edward R. Powers, S.J. (1955)
Associate Professor of Mathematics (1965); A.B., M.A., Boston College; Ph.L., S.T.L., Weston College

John J. Quinn, S.J. (1956)
Associate Professor of English (1968) A.B., Holy Cross College; Ph.L., Weston College; M.A., Fordham University; S.T.B., Woodstock College; Ph.D., University of London

Robert A. Sallavanti (1969)
Associate Professor of Chemistry (1972); B.S., Wilkes College; Ph.D., University of Pennsylvania

Angelina T. Scardamaglia, D. Et U. (1947); Associate Professor (1970) Assistant Librarian (1947), A.B., B.S. in L.S., M.S. in L.S., Marywood College

Timothy H. Scully, D. Et U. (1948)
Associate Professor (1968), Chairman Department of History (1970); B.S., M.A., Boston College; Doctoral Studies, Fordham University

Bernard A. Suppé, S.J. (1957)
Associate Professor of Philosophy (1965); A.B., Ph.L., St. Louis University; S.T.L., Woodstock College

Charles J. Thoman, S.J. (1953-1955; 1966); Associate Professor of Chemistry (1969); B.S., Spring Hill College; M.S., Fordham University; S.T.L., Woodstock College; Ph.D., University of Massachusetts

Joseph J. Tremont (1971)
Associate Professor of Education (1971) B.S., M.S., State College, Fitchburg, Mass.; C.A.S., Ed D., Harvard University

Carleton B. Upright (1970)
Associate Professor of Education (1970); B.S., Albany State College; M.A., Ed.D., New York University

Bernard D. Williams (1962)
Associate Professor of History (1968) B.S., La Salle College; M.A., Niagara University; Doctoral Studies, University of Maryland

John C. Williams (1964)
Associate Professor of Reading (1971); Director of Reading Clinic (1964); B.S., Bloomsburg State College; M.S., University of Scranton

Juan Zela-Koort (1963-64; 1966)
Associate Professor of Modern Languages (1967); A.B., University of Cuzco; Ph.D., University of Munster

ASSISTANT PROFESSORS

Donald L. Angell (1969)
Assistant Professor of Education and Psychology (1969); B.S., Ithaca College; M.S., University of Oregon; Ph.D., University of Illinois

George V. Babcock, Jr. (1963)
Assistant Professor of Economics (1965); A.B., M.A., Ph.L., Boston College; M.B.A., New York University; Cand. Ph.D., Cornell University

Carl P. Barone (1970)
Assistant Professor of Education (1970) B.A., M.A., Colorado State College; M.A., University of Wisconsin; Ph.D., Ohio University

Thomas N. Beckish (1964)
Assistant Professor of Psychology (1967); Assistant Director of Counseling Center (1964) B.S., M.S., University of Scranton; Doctoral Studies, Lehigh University; Certified Psychologist

John A. Beidler (1964)
Assistant Professor (1967), Chairman Department of Mathematics (1970); A.B., King's College; M.A., Lehigh University; Cand. Ph.D., Pennsylvania State University

Robert M. Bessoir (1968)
Assistant Professor of Physical Education (1969), Basketball Coach (1972); B.S., University of Scranton, M.S., East Stroudsburg State College

Mrigen Bose (1968)
Assistant Professor of Business Administration (1968)
B.S., Patna University;
M.A., University of Calcutta;
M.S., University of Kentucky;
Ph.D., University of Utah

Richard J. Bourcier (1968)
Assistant Professor of Modern Languages (1968); A.B., Assumption College; M.A., Cand. Ph.D., Laval University

Ellen M. Casey (1969)
Assistant Professor of English (1969)
B.S., Loyola University, Chicago;
M.A., University of Iowa; Ph.D., University of Wisconsin

Stephen J. Casey (1969)
Assistant Professor in Theology (1972)
A.B., Iona College;
M.A., Marquette University

Raymond W. Champagne, Jr. (1967)
Assistant Professor of History (1969)
A.B., Providence College; M.A., Duke University; Cand. Ph.D., Loyola University, Chicago

Stanley L. Chickson (1958)
Assistant Professor of Mathematics (1958); B.S.C.E., Pennsylvania State University; M.S., Bucknell University

Francis H. Curtis (1966)
Assistant Professor of Education (1966)
B.S., M.Ed., Cand. Ed. D., Pennsylvania State University

Vito Del Vecchio (1969)
Assistant Professor of Biology (1969)
B.S., University of Scranton; M.S., St. John's University; Ph.D., Hahnemann Medical College Graduate School

Anthony J. DiStefano (1968)
Assistant Professor of Physics (1968)
B.E.E., Brooklyn Polytechnic Institute; M.A., Columbia University; Cand. Ph.D., Stevens Institute of Technology

Troy L. Duplessis, Jr. (1971)
Major, U.S. Army, Assistant Professor of Military Science (1971);
B.S., Louisiana State University

Gary E. Eichelsdorfer (1965)
Assistant Professor of Mathematics (1968); A.B., Gannon College;
M.A., University of Detroit;
Doctoral Studies, Pennsylvania State University

Paul F. Fahey, Jr. (1968)
Assistant Professor of Physics (1968)
B.S., University of Scranton; M.S., Ph.D., University of Virginia

A. Leo Fleming, F.S.C., (1968)
Assistant Professor of Philosophy (1968); A.B., The Catholic University of America; M.A., M.S., Cand. Ph.D., Fordham University

Joseph M. Hamernick, S.J. (1967)
Assistant Professor of English and Speech (1970); B.S., St. Joseph's College; S.T.B., Woodstock College;
M.A., The Catholic University of America

Francis X. J. Homer (1968)
Assistant Professor of History (1970)
A.B., University of Scranton; M.A., Ph.D., University of Virginia

John S. Hopkins (1967)
Assistant Professor of Physical Education (1970); B.S., East Stroudsburg State College; M.S., University of Massachusetts

Robert F. Hueston (1968)
Assistant Professor of History (1971)
A.B., College of the Holy Cross;
M.A., Ph.D., University of Notre Dame

Riaz Hussain (1967)
Assistant Professor of Physics (1967)
B.S., Forman College, Pakistan;
M.S., University of the Panjab, Pakistan; Cand. Ph.D., Johns Hopkins University

Martha R. Jardine (1972)
Assistant Professor of Physical Education (1972); B.S., S.U.C. at Brockport; M.Ed., East Stroudsburg State College

Bernard J. Johns (1961)
Assistant Professor of Mathematics (1968); A.B., Wilkes College; M.A., Bucknell University; Cand. Ph.D., University of Illinois

Francis X. Jordan (1966)
Assistant Professor of English (1968)
A.B., M.A., University of Scranton;
Cand. Ph.D., St. Louis University

William E. Katorkas (1954)
Assistant Professor of Business
Administration (1961); B.S.,
University of Scranton;
M.B.A., New York University

Frank J. Katusak (1967)
Assistant Professor of Business
Administration (1969); B.A., M.B.A.,
University of Scranton;
Cand., Ph.D., State University of
New York, Binghamton

Charles J. Keffer (1967)
Assistant Professor of Physics (1969)
B.S., University of Scranton;
M.A., Ph.D., Harvard University

Karl W. Kleinz, S.J. (1960-63; 1971)*
Assistant Professor of Theology (1971)
A.B., M.A. (Classics), M.A.
(Philosophy), Boston College; Ph.L.,
Weston College; S.T.B., S.T.L.,
Woodstock College; Cand. Ph.D.,
Graduate Theological Union,
Berkeley

Mary Anne V. McCarthy (1972)
Assistant Professor of Psychology
(1972); B.A., Trinity College;
M.A., Ph.D., University of Maryland

John W. McGinley (1970)
Assistant Professor of Philosophy
(1970); A.B., Holy Cross
College; Ph.D., Boston College

Bernard J. McHugh (1971)
Major, U.S. Army, Assistant Professor
of Military Science (1971);
B.A., Cornell University

Francis J. Murray (1965)
Assistant Professor of Physics (1968)
B.S., Iona College; M.S., St. John's
University; Cand. Ph.D., New York
University

Jonas V. Narbutas (1968)
Assistant Professor of Philosophy
(1969); A.B., Hunter College;
M.A., Ph.D., Fordham University

* On leave, 1972-73.

Kevin M. Nordberg (1970)
Assistant Professor in Philosophy (1972)
A.B., Assumption College;
Cand. Ph.D., University of Notre Dame

Louis F. Orlando (1970)
Captain, U. S. Army
Assistant Professor of Military Science
(1970); B.A., The Citadel College

Peter P. Poole (1966)
Assistant Professor of Business
Administration (1966); B.S.,
M.B.A., Northeastern University;
Cand., Ph.D., New York University

John B. Pryle (1967-1969; 1972)
Assistant Professor of Sociology (1972)
B.S., University of Scranton;
M.A., Fordham University;
Cand. Ph.D., Catholic University

William V. Rakauskas (1969)
Assistant Professor of English (1969)
B.S., M.A., University of Scranton;
Cand. Ed.D., Temple University

Edward J. Rielly (1971)
Assistant Professor of Sociology (1971)
A.B., Cathedral College
M.A., St. John's University
Cand. Ph.D., New York University

John B. Robertson, Jr. (1969)
Assistant Professor of Physical
Education (1969); B.S.,
Springfield College; M.A., Trenton
State College

Cheng Hwa Siao (1969)
Assistant Professor (1970), Reference
Librarian; L.L.B., Soochow University;
M.A., Meiji University;
M.S. in L.S., Villanova University

Ronald Sinzdak (1970)
Assistant Professor of Mathematics
(1970); B.S., Wilkes College;
M.S., Lehigh University; Ph.D.,
University of Missouri

Kevin E. Somerville (1972)
Assistant Professor of Psychology (1972)
A.B., Ph.D., St. Louis University

J. Michael Strong (1972)
Assistant Professor of Physical
Education (1972); B.S., Concord
College; M.S., West Chester State
College

Richard T. Warfle (1968)
Assistant Professor of History (1968)
A.B., M.A., Fairfield University;
M.A., Fordham University;
Ph.D., University of Connecticut

Edward F. Warner (1968)
Assistant Professor of English (1969)
A.B., King's College; M.S.,
University of Scranton

Robert F. Young, S.J. (1965)
Assistant Professor of Classics (1965)
A.B., Ph.L., M.A., St. Louis
University; S.T.L., Woodstock College

Michael J. Zdrojewski (1970)
Captain, U. S. Army
Assistant Professor of Military Science
(1970); B.S., Canisius College

INSTRUCTORS

Ronald F. Fanyak (1968)
Instructor in Philosophy (1968)
A.B., Gonzaga University;
M.A., Cand. Ph.D., Duquesne
University

Robert M. Granville (1968)
Instructor in Modern Languages (1968)
A.B., Boston University; M.A.,
Middlebury College; Cand. Ph.D.,
New York University

Edward F. Kaminsky (1972)
Instructor of Business Administration
(1972); B.S., King's College;
C.P.A. in Pennsylvania

Lawrence N. McGinnis (1969)
Instructor in Philosophy (1969)
B.S., Xavier University (Ohio);
M.A., Cand. Ph.D., Fordham University

Thomas L. Scott, S.J. (1970)*
Instructor in History (1970)
B.A., M.A., St. Louis University;
Cand. Ph.D., University of
Wisconsin

Gary L. Siegel (1972)
Instructor in Sociology (1972)
B.A., Our Lady of Snows Scholasticate;
M.A., St. Louis University

Cheng-Yee Wang (1969)
Instructor (1969), Library Cataloger
B.A., National Taiwan University;
M.S.L.S., Villanova University

* On leave, 1972-73.

AFFILIATED FACULTY

William J. Antognoli, M.D.
Director of Laboratory and School of
Medical Technology
Scranton State General Hospital

LECTURERS

John A. Antognoli
Professorial Lecturer in Rehabilitation
Counseling;
B.S., M.S., University of Scranton

Michael J. Aronica
Professorial Lecturer in Rehabilitation
Counseling; B.S., University of
Scranton; M.D., Jefferson
Medical College

Walter Barbe
Professorial Lecturer in Education
B.S., M.A., Ph.D., Northwestern
University

Rev. Robert J. Barone
Lecturer in Theology
A.B., St. Mary's College;
S.T.B., St. Mary's Seminary;
S.T.L., S.T.D. Pontifical University of
St. Thomas Aquinas, Rome

Rev. John A. Bergamo
Lecturer in Theology
A.B., Mount St. Mary's College;
J.C.L., Gregorian University, Rome

Arnold F. Campo
Professorial Lecturer in Business
Administration; Ph.B., University of
Santa Clara

Norman A. Carter
Lecturer in Education
B.S., M.S., University of Scranton

Ambrose G. Charnogursky
Lecturer in Business Administration
B.S , M.B.A., University of Scranton

William W. Davis, Jr.
Lecturer in Business Administration
B.S., Rider College

William A. Dick
Professorial Lecturer in Reading
B.S., State University of New York at Fredonia; M.S., State University of New York at Oneonta; M.S., University of Scranton

William M. Donovan
Lecturer in Business Administration
B.S., University of Scranton

Francis L. Duffy, S.J. (1968)
Lecturer in English
A.B., S.T.B., Woodstock College; M.A., Fordham University

Paul S. Dudzik
Lecturer in Business Administration
B.S., M.B.A., University of Scranton

Rev. Lee J. Freeman
Lecturer in Theology
B.S., University of Texas; B.D., Southern Baptist Theological Seminary

Anthony A. Galdieri
Professorial Lecturer in Counselor Education; B.S., M.S., University of Scranton; Ph.D., Ohio University

Rev. John P. Gallagher
Professorial Lecturer in History
A.B., St. Peter's Seminary, University of Western Ontario; M.A., Ph.D., The Catholic University of America

Beatrice M. Hale
Lecturer in Biology
B.S., Mount Mary College

William R. Johnson
Professorial Lecturer in Elementary Education; B.S., Eastern Michigan University; M.S., University of Scranton

Anne D. Jones
Lecturer in Art
B.S., Indiana State College; M.A., Columbia University

Cyril E. Kane
Lecturer in Education
A.B., University of Scranton; M.A., Bucknell University

Robert T. Kelly
Lecturer in Business Administration
B.S., M.B.A., University of Scranton; C.P.A. in Pennsylvania

Eleanor Krajewski, D. Et U., Lecturer in Modern Languages
A.B., Marywood College; M.S., University of Scranton

N. Zwi Leiter
Professorial Lecturer in Rehabilitation Counseling; M.Ed., Loyola College; Ph.D., The Catholic University of America

Rev. John H. Louis
Lecturer in Theology
A.B., M.A., The Catholic University of America; S.T.L., J.C.D., Gregorian University, Rome

William J. McDonnell
Lecturer in Accounting
B.S., M.B.A., University of Scranton; C.P.A. in Pennsylvania

Sister M. Manus McLaughlin, R.S.M.
Professorial Lecturer in Art Education
B.A., College Misericordia; M.A., University of Notre Dame; D.Ed., University of Pittsburgh

Peter M. Mensky
Professorial Lecturer in Educational Administration; B.A., University of Scranton; M.A., Bucknell University; Ed.D., The Pennsylvania State University

William J. Murray
Professorial Lecturer in Science Education
B.S., M.A., University of Scranton

Matthew J. O'Keefe, D. Et U.
Lecturer in Economics
A.B., Holy Cross College

Wanda M. Persichetti
Lecturer in Modern Languages
A.B., Instituto Superiore Orientale, Naples; M.A., Marywood College; Dottore in M.L., Instituto Universitario Orientale, Naples

Robert T. Ryder, D. Et U.
Lecturer in Accounting
B.S., M.B.A., University of Scranton

Robert H. Sayers
Professorial Lecturer in Business Administration; B.A., The Pennsylvania State University; J.D., American University

Richard J. Senker
Lecturer in Business Administration
B.S., M.B.A., University of Scranton
C.P.A. in Pennsylvania

Rabbi Simon Shoop
Lecturer in Jewish Studies
A.B., University of Pittsburgh, M.A., Yeshiva University, Ph.D., University of Pittsburgh

Philip H. Siegel
Professorial Lecturer in Business Administration; A.B., Wilkes College; M.B.A., University of Cincinnati; Ph.D., New York University

Leo Southard
Lecturer in Business Administration
B.S., University of Scranton
L.L.D., Dickinson College

Rev. John A. Walsh
Lecturer in Theology
A.B., M.A., University of Scranton; S.T.L., St. Mary's Seminary

Donald J. Whalen
Professorial Lecturer in Counselor Education; B.S., University of Scranton; M.S., Pennsylvania State University; Certified Psychologist

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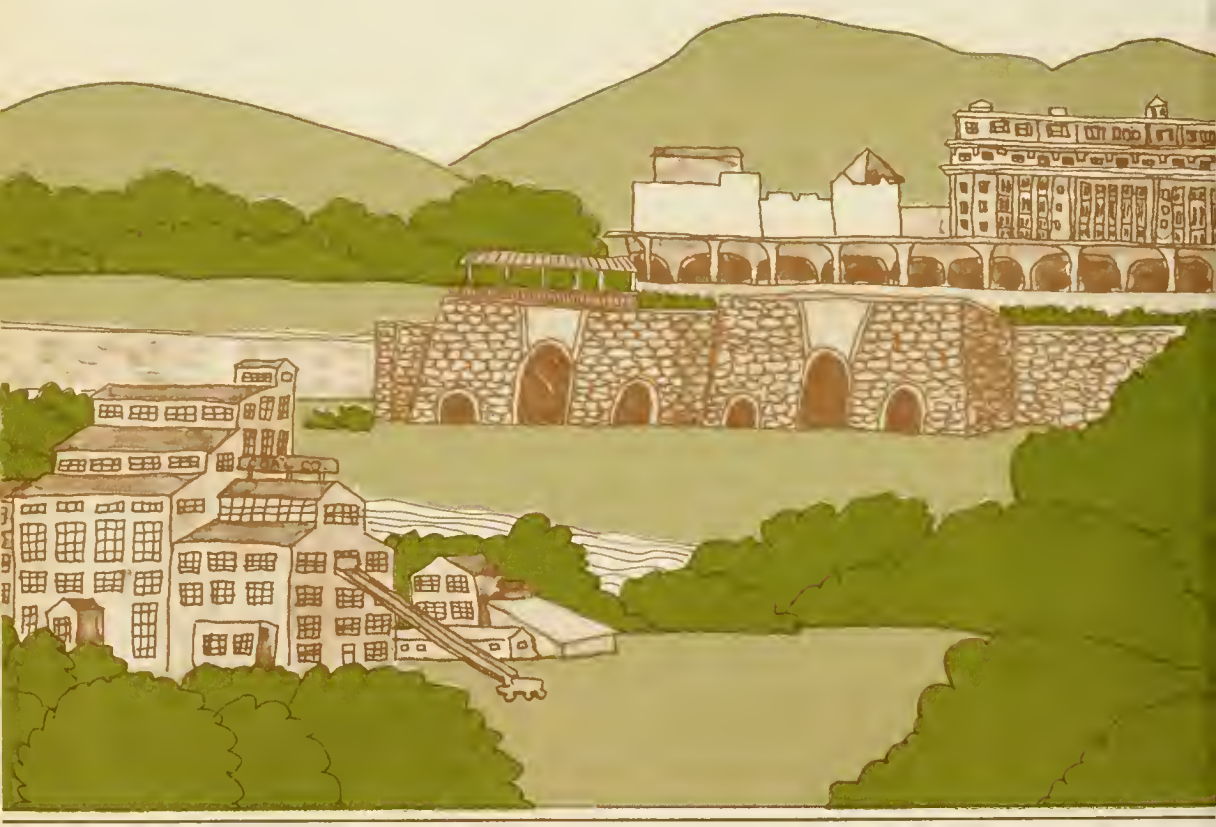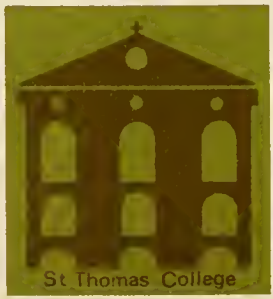
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